Appendix H -
By-unit Analysis for various Ecological Systems and Species Associations

This page intentionally left blank

Appendix H
Table of Contents

List of Tables

List of Figures

This page intentionally left blank

Appendix H - By-unit Analysis for various Ecological Systems and Species Associations

This appendix was created to include additional by unit analysis for ecosystems and species associations where data was available and necessary to better understand the effects of each alternative within the EIS.

H.1 Ecosystems

H.1.1 Upland Longleaf Pine Forest and Woodland

As shown in Figure H 1 and Table H 1, alternatives A and B contribute little to the restoration and maintenance of upland longleaf. Alternatives C, D, and E are more successful, but will still require decades to achieve all restoration goals.

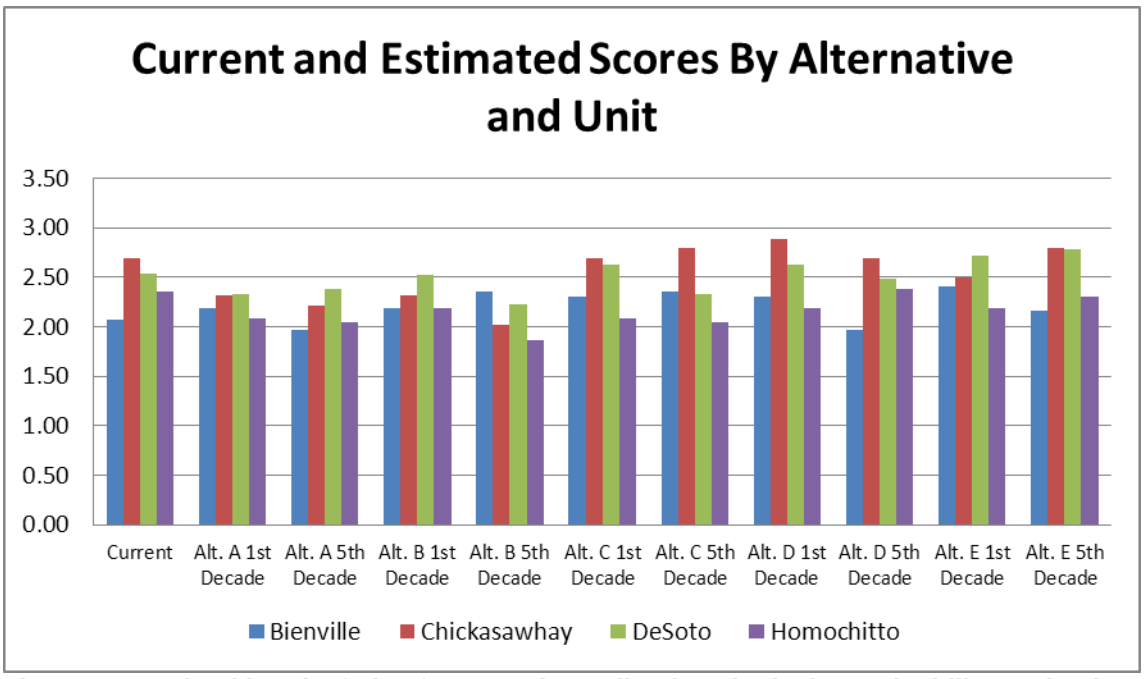


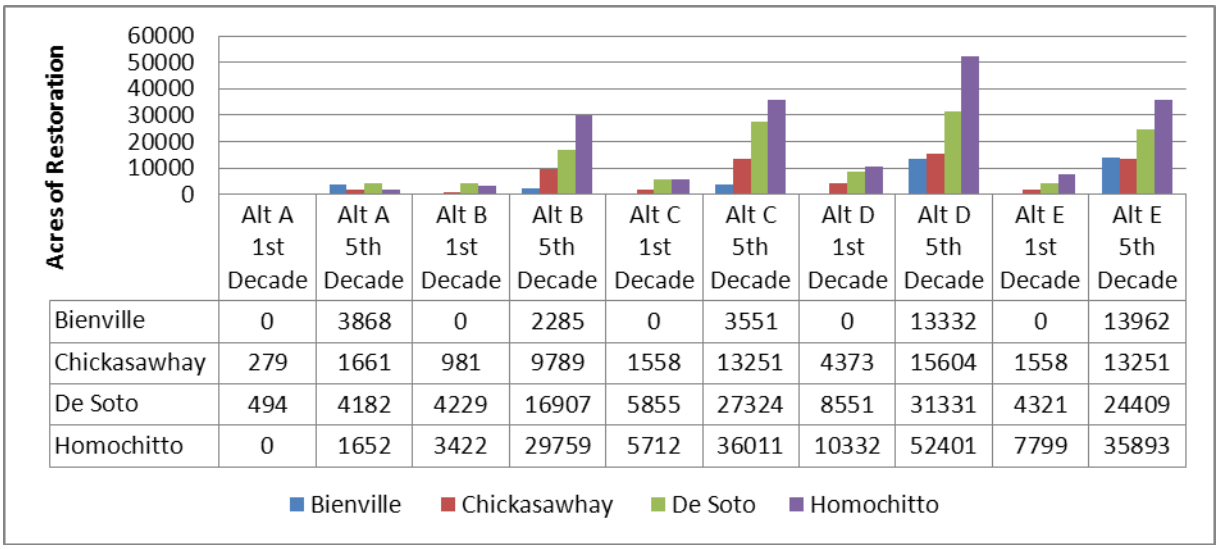
Figure H 1. Upland longleaf pine forest and woodland ecological sustainability evaluation scores by alternative and unit

Table H 1. Upland longleaf pine forest and woodland ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Bienville	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
	2.07	2.19	1.97	2.19	2.35	2.30	2.35	2.30	1.97	2.41	2.16
Chickasawhay	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good
	2.69	2.31	2.21	2.31	2.02	2.69	2.79	2.88	2.69	2.50	2.79
De Soto	Good	Fair	Fair	Good	Fair	Good	Fair	Good	Fair	Good	Good
	2.53	2.33	2.38	2.52	2.22	2.62	2.33	2.62	2.48	2.72	2.78
Homochitto	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
	2.35	2.08	2.05	2.19	1.86	2.08	2.05	2.19	2.38	2.19	2.30

The key attributes and corresponding actions to assure the ecological sustainability are as follows:

- Percent acres in appropriate system type (including acres restored from previously converted system types) (Figure H 2)
- Percent of occurrences in mature open canopy conditions (Figure H 3)
- Percent acres burned at the desired interval and seasonality/intensity (Figure H 4 and Figure H 5)



	Alt A 1st Decade	Alt A 5th Decade	Alt B 1st Decade	Alt B 5th Decade	Alt C 1st Decade	Alt C 5th Decade	Alt D 1st Decade	Alt D 5th Decade	Alt E 1st Decade	Alt E 5th Decade
Bienville	0	3868	0	2285	0	3551	0	13332	0	13962
Chickasawhay	279	1661	981	9789	1558	13251	4373	15604	1558	13251
De Soto	494	4182	4229	16907	5855	27324	8551	31331	4321	24409
Homochitto	0	1652	3422	29759	5712	36011	10332	52401	7799	35893

Figure H 2. Upland longleaf pine forest and woodland restoration acres by alternative and unit

Despite the impressive change over time depicted in Figure H 2, and the acreage being restored, upland longleaf pine ecosystem still only scores as “good” in even the most ambitious alternatives. These scores are due in part to the fact that less than 3 percent of the original longleaf coverage remains rangewide due to forest management practices of the 20th century. While National Forest System lands, in general, harbor more longleaf than the surrounding landscape, National Forests in Mississippi has not been immune to longleaf decline. The amount of restoration needed to achieve a “good” rating is likely to require intensive efforts well into the 22nd century.

Alternative A contributes little to the restoration of upland longleaf while alternative B, based on our current trajectory, shows some improvement by the 5th decade. Alternatives C, D, and E are considerably more successful, but will still require decades to achieve all restoration goals.

It is worth noting that lower restoration rates, particularly on the Bienville, are due, in part, to management of red-cockaded woodpeckers in mature loblolly pine forests. This management limits the number of acres that can be restored to upland longleaf in the near term. As adjacent restored longleaf stands mature to the point of accommodating red-cockaded woodpecker needs, the need to retain mature loblolly will decrease accordingly.

Where upland longleaf currently exists or restoration is planned, the desired condition of occurrences is canopy closure of less than 80 percent and trees 60 years old and older. Under all but alternative A, occurrences extant at any given time are in most cases meeting the criteria for mature open conditions (Figure H 3) based on thinning and burning activities. The percentages shown for alternative B, while impressive, are based on fewer restored acres than alternatives C, D, and E.

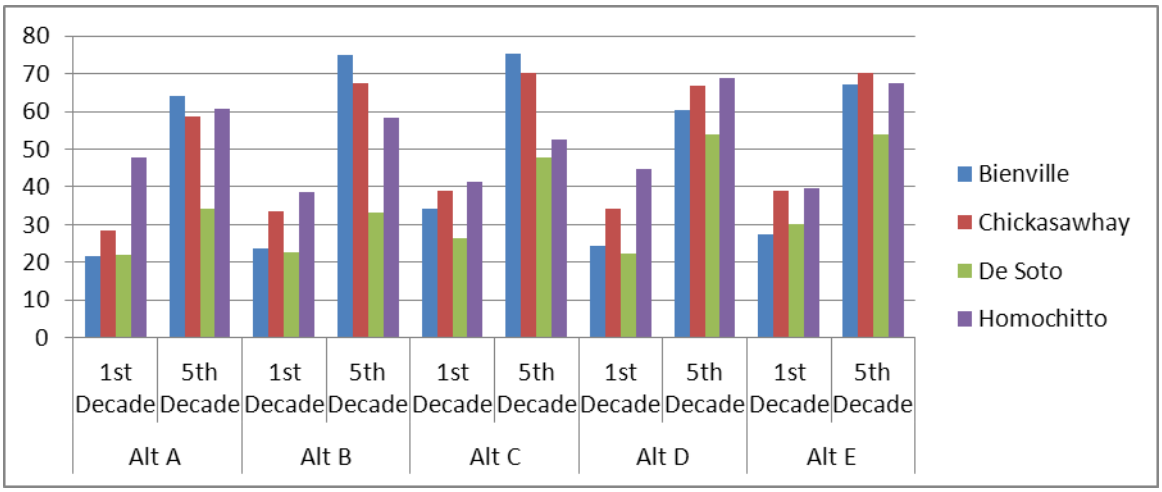
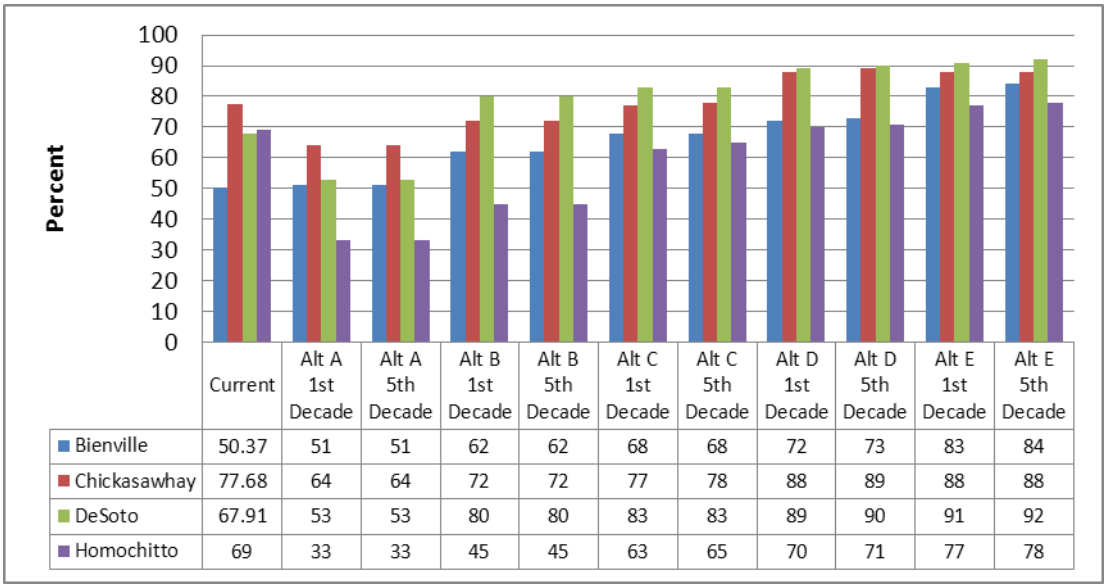


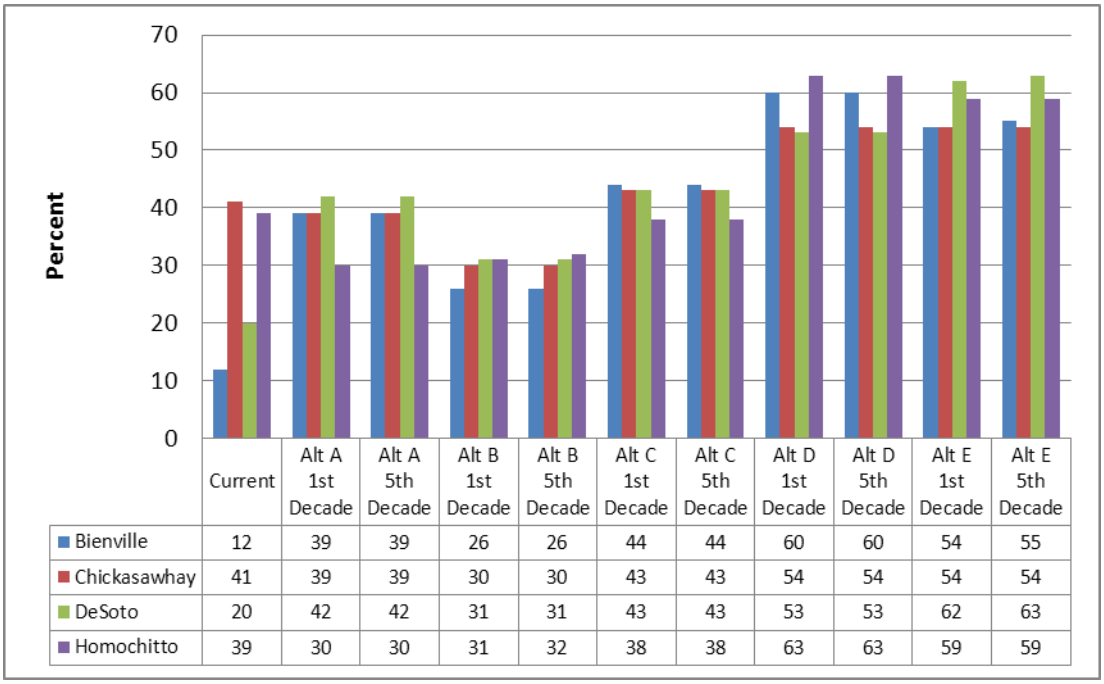
Figure H 3. Percent of upland longleaf pine forest and woodland in mature open canopy condition

Figure H 4 and Figure H 5 show fire regime variables by alternative. Herbaceous dominated understories, including grasses and forbs, are important attributes of healthy longleaf ecosystems best achieved by the application of frequent growing season fire, ideally once every 1 to 3 years (desired interval). These data show that both fire frequency and seasonality/intensity, in most cases, are well within the “good” to “very good” range and increase respectively from alternatives C thru E. It is worth noting, that alternatives C, D, and E, due to increasing restored acres by alternative, are achieving high scores while burning significantly more acres.



	Current	Alt A 1st Decade	Alt A 5th Decade	Alt B 1st Decade	Alt B 5th Decade	Alt C 1st Decade	Alt C 5th Decade	Alt D 1st Decade	Alt D 5th Decade	Alt E 1st Decade	Alt E 5th Decade
Bienville	50.37	51	51	62	62	68	68	72	73	83	84
Chickasawhay	77.68	64	64	72	72	77	78	88	89	88	88
DeSoto	67.91	53	53	80	80	83	83	89	90	91	92
Homochitto	69	33	33	45	45	63	65	70	71	77	78

Figure H 4. Percent of upland longleaf pine forest and woodland burned at desired interval by alternative and unit



	Current	Alt A 1st Decade	Alt A 5th Decade	Alt B 1st Decade	Alt B 5th Decade	Alt C 1st Decade	Alt C 5th Decade	Alt D 1st Decade	Alt D 5th Decade	Alt E 1st Decade	Alt E 5th Decade
Bienville	12	39	39	26	26	44	44	60	60	54	55
Chickasawhay	41	39	39	30	30	43	43	54	54	54	54
DeSoto	20	42	42	31	31	43	43	53	53	62	63
Homochitto	39	30	30	31	32	38	38	63	63	59	59

Figure H 5. Percent of upland longleaf pine forest and woodland burned in the growing season by alternative and unit

H.1.2 Shortleaf Pine-Oak Forest and Woodland

As shown in Figure H 6 and Table H 2, alternative A contributes little to the restoration and maintenance of shortleaf-oak while alternatives B and E, shows some improvement over time but still all show a fair overall ecological sustainability evaluation score. Alternatives C and D are more successful, but will still require decades to achieve all restoration goals. Only alternatives C and D show acceptable rates of ecological sustainability by the 5th decade.

Table H 2. Shortleaf pine-oak forest and woodland ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Ackerman	Fair	Poor	Poor	Fair	Fair	Fair	Good	Fair	Good	Fair	Fair
	1.83	1.49	1.49	2.03	2.46	1.97	2.62	1.86	2.81	1.86	2.38
Bienville	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
	2.08	2.06	2.06	2.06	2.06	2.14	2.22	2.14	2.14	2.25	2.33
Holly Springs	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Good	Fair	Fair
	2.16	1.72	1.61	2.06	2.39	2.56	2.67	2.33	2.78	2.42	2.42
Trace	Fair	Fair	Fair	Fair	Fair	Fair	Good	Fair	Good	Fair	Fair
	1.74	1.53	1.53	2.03	2.41	2.03	2.59	1.94	2.79	1.94	2.44
Yalobusha	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Fair
	2.28	1.74	1.63	2.03	2.34	2.51	2.63	2.51	2.86	2.46	2.43

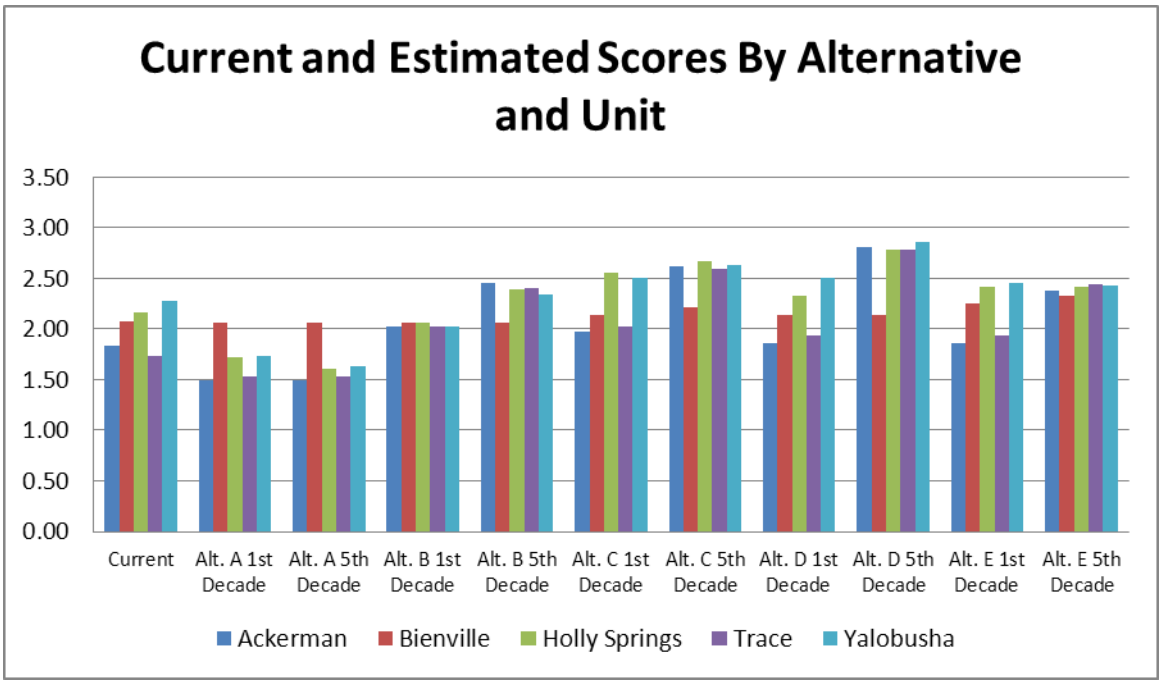


Figure H 6. Shortleaf pine-oak forest and woodland ecological sustainability evaluation scores by alternative and unit

The primary key attributes and corresponding actions to assure the ecological sustainability are as follows:

- Percent acres in appropriate system type (including acres restored from previously converted system types) (Figure H 7)
- Percent of occurrences in mature open canopy conditions (Figure H 8)
- Percent acres burned at the desired interval and seasonality/intensity (Figure H 9 and Figure H 10).

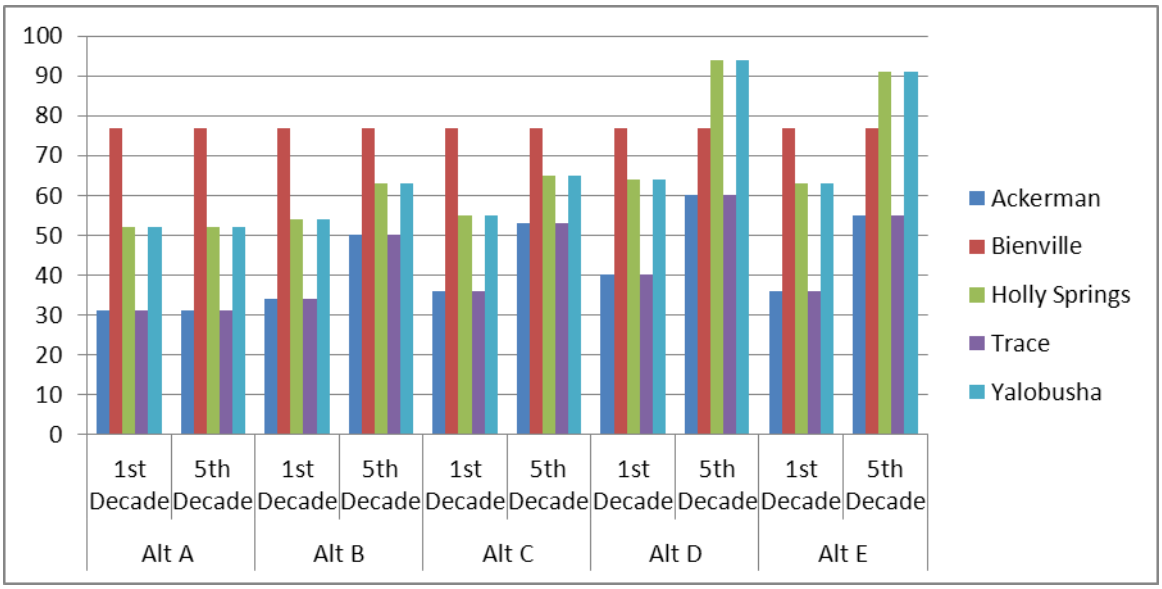


Figure H 7. Shortleaf pine-oak forest and woodland percentage in appropriate system by alternative and unit

Alternative A does not increase the coverage of this ecosystem over time. In alternatives B and C, however, coverage does increase somewhat by the 5th decade. Alternatives D and E, on the other hand, contribute significantly to the increased abundance of this system type especially on the Holly Springs and Yalobusha units. The Bienville unit contains relatively little potential acreage for this system type and therefore changes little over time by alternative.

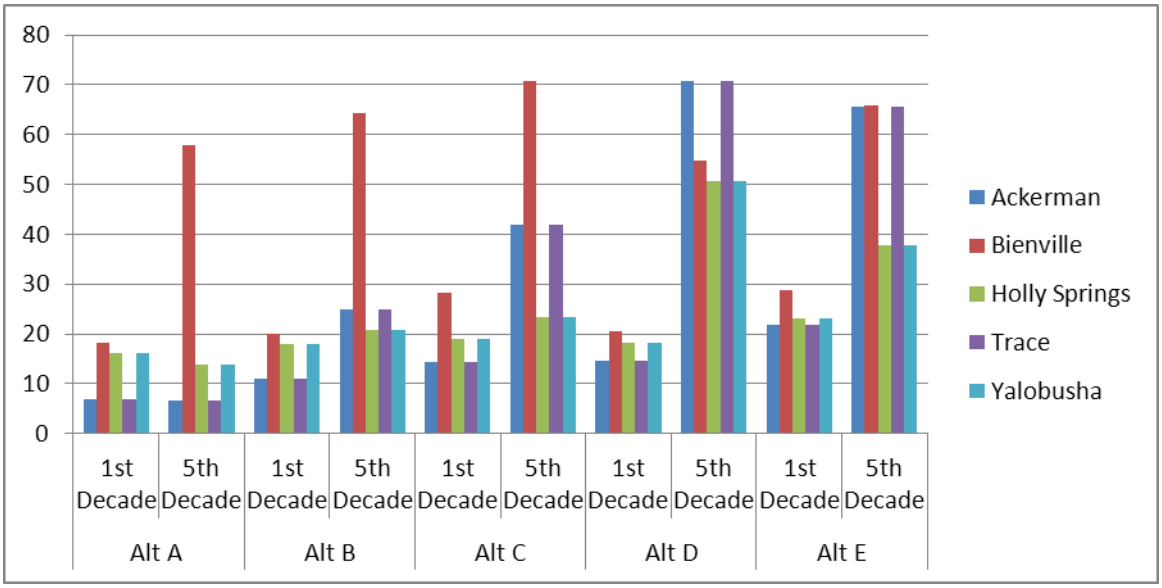
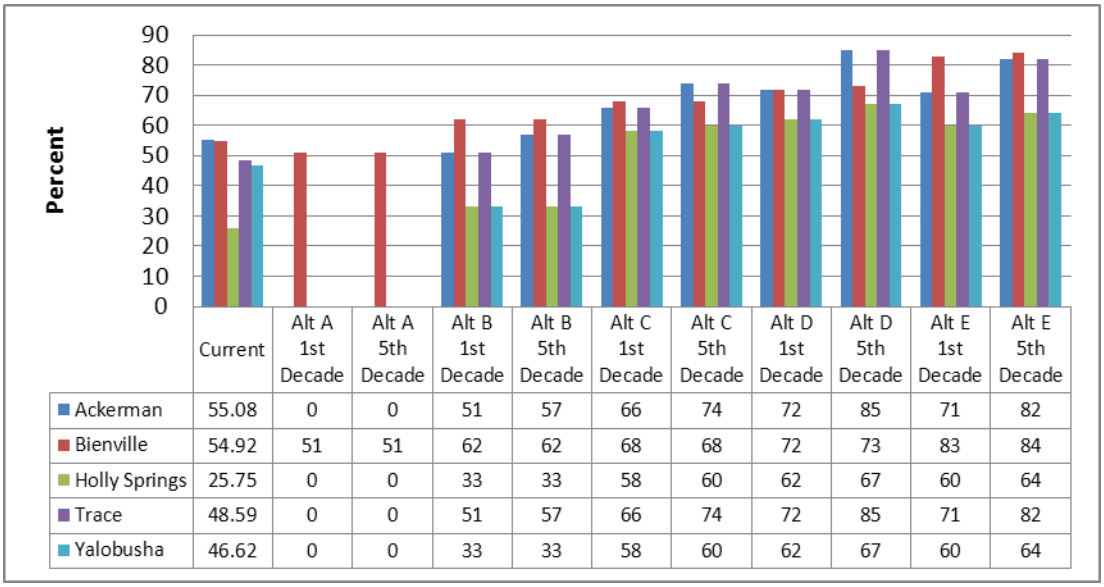


Figure H 8. Shortleaf pine-oak forest and woodland percentage mature open by alternative and unit

With the exception of the Bienville unit which contains little shortleaf-oak, estimated outcomes regarding mature open conditions vary widely by alternative and unit. Overall, alternative D and to a lesser extent alternative E, provide the best canopy and age class conditions by the 5th decade due to more extensive

thinning activities. Alternative C also provides some improvements in both decades while alternative B provides only modest improvements. Alternative A shows degradation to the system by the 5th decade, again with the exception of the Bienville unit which is related to red-cockaded woodpecker habitat management mandates.

Figure H 9 and Figure H 10 below show fire regime variables by alternative. Herbaceous dominated understories, including grasses and forbs, are important attributes of healthy shortleaf-oak ecosystems best achieved by the application of frequent growing season fire, ideally once every 1 to 3 years (desired interval).

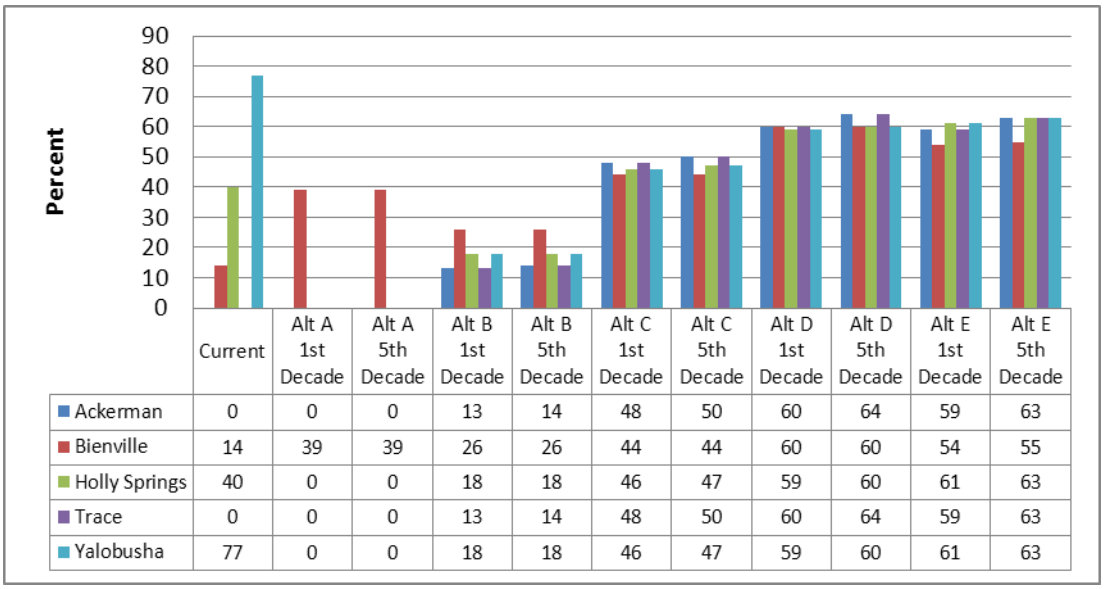


	Current	Alt A 1st Decade	Alt A 5th Decade	Alt B 1st Decade	Alt B 5th Decade	Alt C 1st Decade	Alt C 5th Decade	Alt D 1st Decade	Alt D 5th Decade	Alt E 1st Decade	Alt E 5th Decade
Ackerman	55.08	0	0	51	57	66	74	72	85	71	82
Bienville	54.92	51	51	62	62	68	68	72	73	83	84
Holly Springs	25.75	0	0	33	33	58	60	62	67	60	64
Trace	48.59	0	0	51	57	66	74	72	85	71	82
Yalobusha	46.62	0	0	33	33	58	60	62	67	60	64

Figure H 9. Percent of shortleaf pine-oak forest and woodland burned at desired interval by alternative and unit

Alternative A does not allow for any prescribed fire on the following units: Ackerman, Holly Springs, Trace, and Yalobusha. As a result, only Bienville occurrences of shortleaf-oak will receive prescribed fire under this alternative due to threatened and endangered mandates.

All other alternatives show general improvement in fire regimes by the 5th decade although alternative B show somewhat mixed results when examined by unit. Alternatives C, D, and E are estimated to best provide for the long-term fire needs of this ecosystem, scoring “good” or “very good” for each decade by each alternative for each unit.



	Current	Alt A 1st Decade	Alt A 5th Decade	Alt B 1st Decade	Alt B 5th Decade	Alt C 1st Decade	Alt C 5th Decade	Alt D 1st Decade	Alt D 5th Decade	Alt E 1st Decade	Alt E 5th Decade
Ackerman	0	0	0	13	14	48	50	60	64	59	63
Bienville	14	39	39	26	26	44	44	60	60	54	55
Holly Springs	40	0	0	18	18	46	47	59	60	61	63
Trace	0	0	0	13	14	48	50	60	64	59	63
Yalobusha	77	0	0	18	18	46	47	59	60	61	63

Figure H 10. Percent of shortleaf pine-oak forest and woodland burned in the growing season by alternative and unit

H.1.3 Loblolly Forest

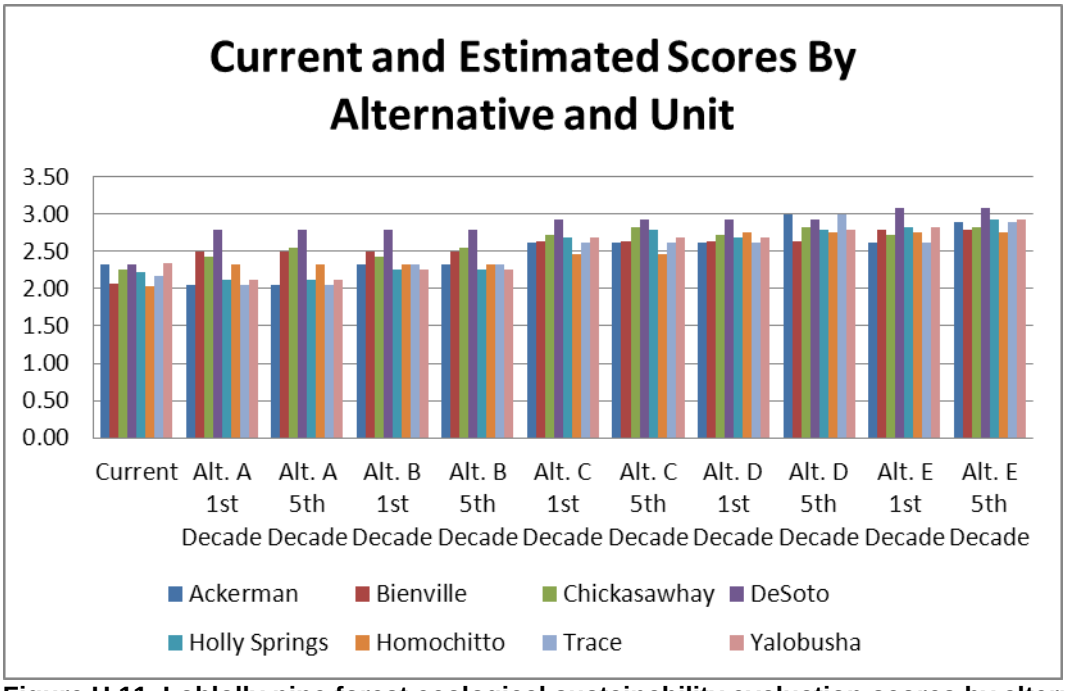


Figure H 11. Loblolly pine forest ecological sustainability evaluation scores by alternative and unit

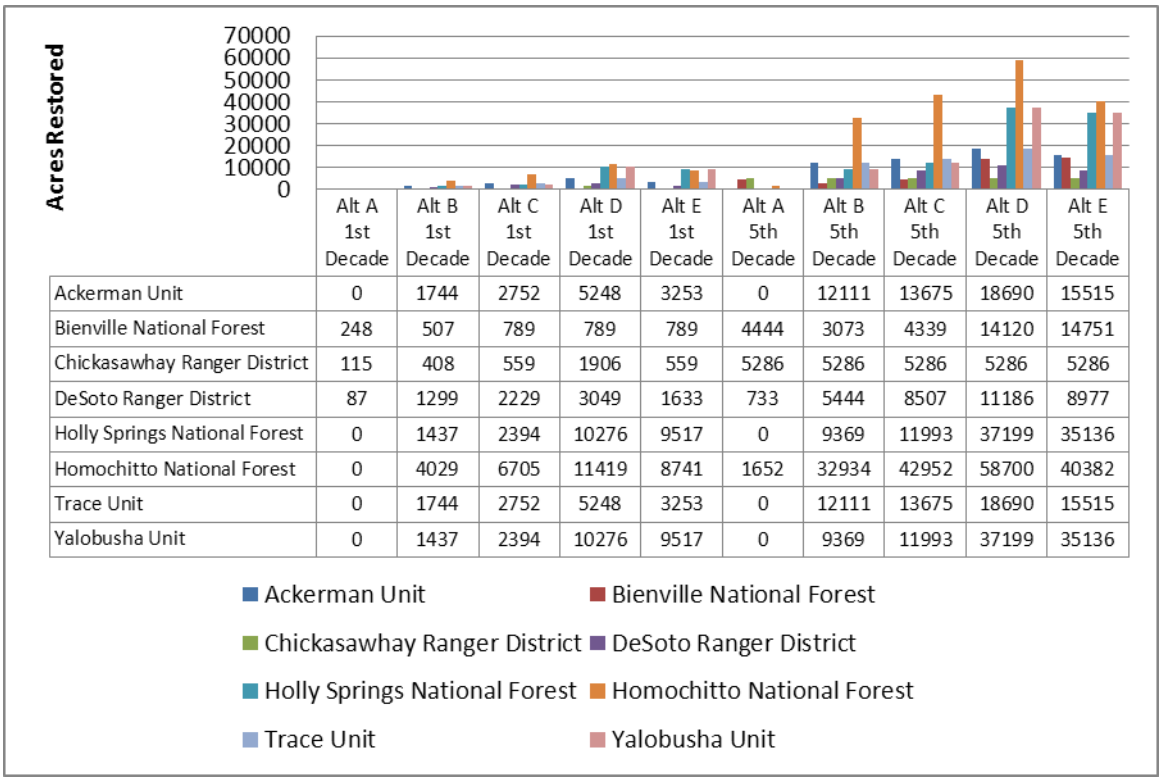
Table H 3. Loblolly forest ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Ackerman	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Fair	Good
	2.32	1.80	1.80	2.12	2.12	2.44	2.44	2.44	2.88	2.44	2.76
Bienville	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good
	2.06	2.32	2.32	2.32	2.32	2.48	2.48	2.48	2.48	2.64	2.64
Chickasawhay	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Good	Good	Good
	2.25	2.24	2.36	2.24	2.36	2.56	2.68	2.56	2.68	2.56	2.68
De Soto	Fair	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.33	2.65	2.65	2.65	2.65	2.81	2.81	2.81	2.81	2.96	2.96
Holly Springs	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Good	Good	Good
	2.22	1.88	1.88	2.04	2.04	2.52	2.64	2.52	2.64	2.68	2.80
Homochitto	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Good
	2.03	2.12	2.12	2.12	2.12	2.28	2.28	2.60	2.60	2.60	2.60
Trace	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Fair	Good
	2.16	1.80	1.80	2.12	2.12	2.44	2.44	2.44	2.88	2.44	2.76
Yalobusha	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Good	Good	Good
	2.34	1.88	1.88	2.04	2.04	2.52	2.52	2.52	2.64	2.68	2.80

As shown in Figure H 11 and Table H 3, alternatives A and B contribute little to the restoration loblolly pine forest to native ecosystems while alternatives C, D, and E, are more successful achieving acceptable ratings forest-wide by the 1st decade, but will still require decades to achieve all restoration goals. Alternative A does not allow for any forest management on the following units: Ackerman, Holly Springs, Trace, and Yalobusha. In other alternatives, restoration efforts will take longer on some units than on others depending on amount, age, and condition of loblolly pine forest to restore to desirable ecosystems. For example, on the Ackerman and Trace units, restoration of loblolly to native ecosystems is not as urgently needed as on other units where upland longleaf restoration is a high priority. The Bienville unit, on the other hand, contains red-cockaded woodpecker populations in loblolly forest which takes precedence over longleaf restoration. In this case, loblolly forest should not be removed until suitable mature longleaf stands are available nearby for red-cockaded woodpecker.

The primary key attributes and corresponding actions to assure the ecological sustainability are as follows:

- Percent acres in appropriate system type (including acres restored from previously converted system types) (Figure H 12)
- Percent of occurrences in mature open canopy conditions (Figure H 13)
- Percent acres burned at the desired interval and seasonality/intensity (Figure H 14 and Figure H 15).



	Alt A 1st Decade	Alt B 1st Decade	Alt C 1st Decade	Alt D 1st Decade	Alt E 1st Decade	Alt A 5th Decade	Alt B 5th Decade	Alt C 5th Decade	Alt D 5th Decade	Alt E 5th Decade
Ackerman Unit	0	1744	2752	5248	3253	0	12111	13675	18690	15515
Bienville National Forest	248	507	789	789	789	4444	3073	4339	14120	14751
Chickasawhay Ranger District	115	408	559	1906	559	5286	5286	5286	5286	5286
DeSoto Ranger District	87	1299	2229	3049	1633	733	5444	8507	11186	8977
Holly Springs National Forest	0	1437	2394	10276	9517	0	9369	11993	37199	35136
Homochitto National Forest	0	4029	6705	11419	8741	1652	32934	42952	58700	40382
Trace Unit	0	1744	2752	5248	3253	0	12111	13675	18690	15515
Yalobusha Unit	0	1437	2394	10276	9517	0	9369	11993	37199	35136

Figure H 12. Acres of loblolly restored to appropriate system

As loblolly forests are restored to native ecosystems, the remaining loblolly forest acreage decreases becoming easier to manage for desired structural conditions. Where loblolly forest currently exists or is not yet restored at any given time, the desired condition of occurrences is canopy closure of less than 80 percent and trees 60 years old and older in order to achieve high function conditions that emulate mature native ecosystem types such as longleaf. Under all alternatives, occurrences extant at any given time are in most cases not meeting the criteria for mature open conditions based on thinning, with the exception of the Chickasawhay unit. Due to the massive spatial extent of loblolly pine forest on most units, thinning operations are unlikely to be completed prior to restoration to longleaf. Thinned loblolly pine forest tends to revert to closed canopy conditions over time if not periodically re-thinned thus creating a cycle of thinning needs that is extremely difficult to successfully meet at the scale required.

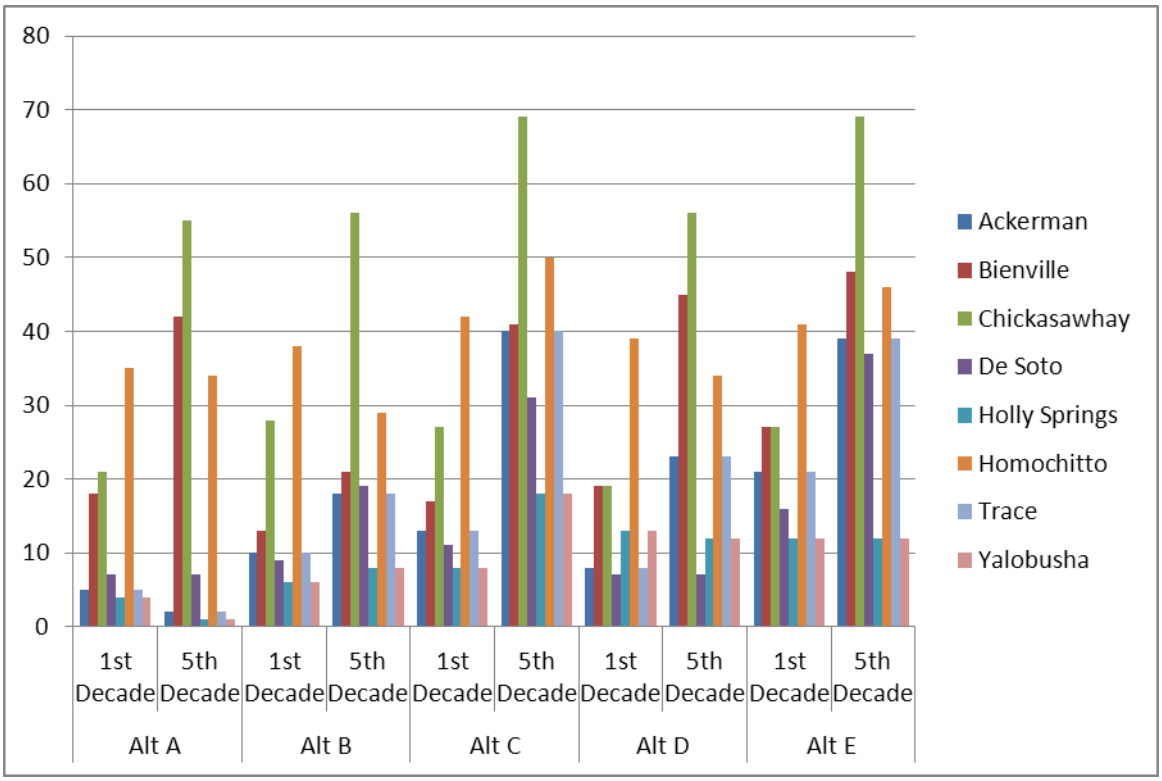
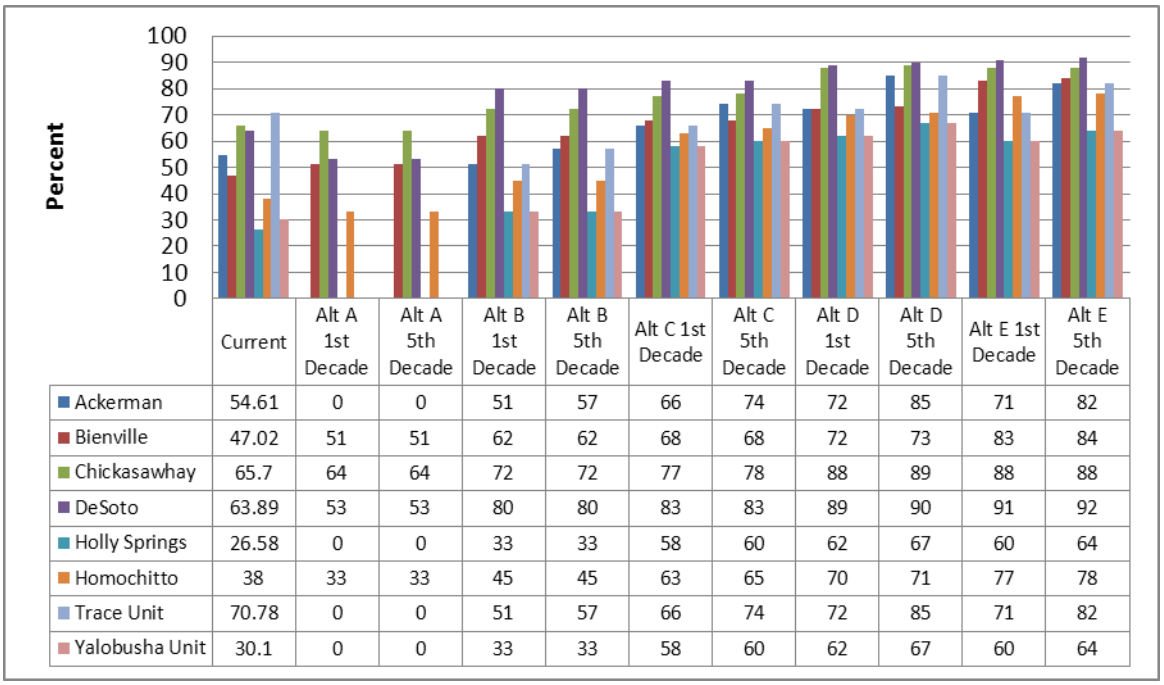


Figure H 13. Percent of loblolly forest in mature open (high function) condition

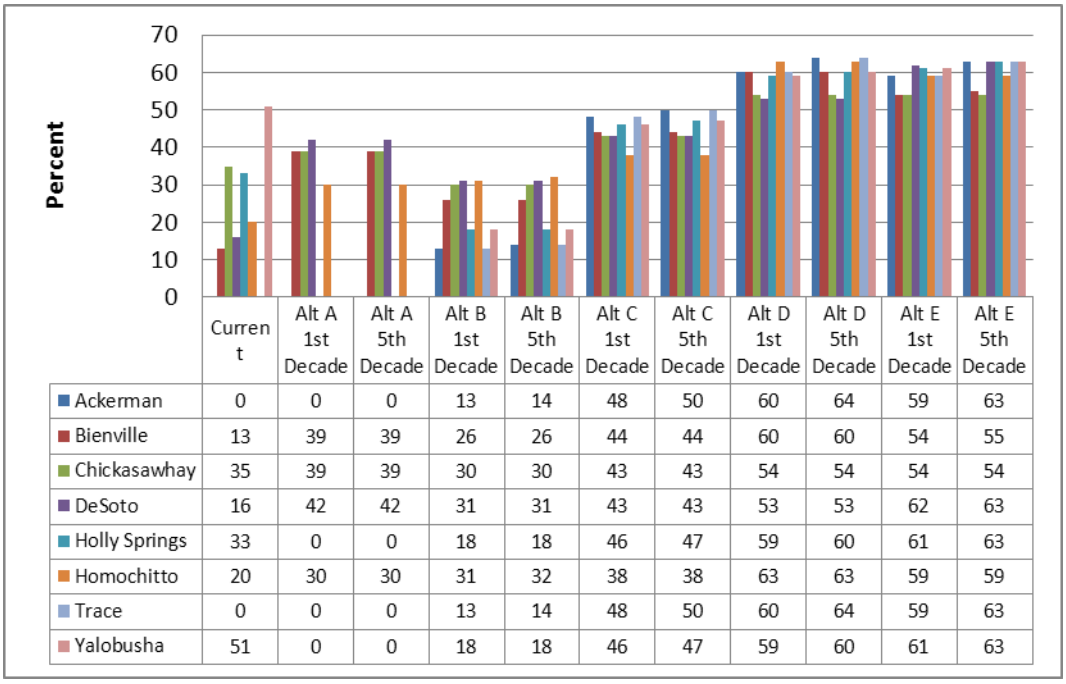
Fire frequency and seasonality/intensity goals also become easier as loblolly forest coverage decreases (Figure H 14 and Figure H 15).

Alternative A does not allow for any prescribed fire on the following units: Ackerman, Holly Springs, Trace, and Yalobusha. All other alternatives show general improvement in fire regimes by the 5th decade although alternative B shows somewhat mixed results when examined by unit. Alternatives C, D, and E are expected to provide for the long-term fire needs of this ecosystem, scoring "good" or "very good" for each decade by each alternative for each unit.



	Current	Alt A 1st Decade	Alt A 5th Decade	Alt B 1st Decade	Alt B 5th Decade	Alt C 1st Decade	Alt C 5th Decade	Alt D 1st Decade	Alt D 5th Decade	Alt E 1st Decade	Alt E 5th Decade
Ackerman	54.61	0	0	51	57	66	74	72	85	71	82
Bienville	47.02	51	51	62	62	68	68	72	73	83	84
Chickasawhay	65.7	64	64	72	72	77	78	88	89	88	88
DeSoto	63.89	53	53	80	80	83	83	89	90	91	92
Holly Springs	26.58	0	0	33	33	58	60	62	67	60	64
Homochitto	38	33	33	45	45	63	65	70	71	77	78
Trace Unit	70.78	0	0	51	57	66	74	72	85	71	82
Yalobusha Unit	30.1	0	0	33	33	58	60	62	67	60	64

Figure H 14. Percent of loblolly burned at the desired interval by alternative and unit



	Current	Alt A 1st Decade	Alt A 5th Decade	Alt B 1st Decade	Alt B 5th Decade	Alt C 1st Decade	Alt C 5th Decade	Alt D 1st Decade	Alt D 5th Decade	Alt E 1st Decade	Alt E 5th Decade
Ackerman	0	0	0	13	14	48	50	60	64	59	63
Bienville	13	39	39	26	26	44	44	60	60	54	55
Chickasawhay	35	39	39	30	30	43	43	54	54	54	54
DeSoto	16	42	42	31	31	43	43	53	53	62	63
Holly Springs	33	0	0	18	18	46	47	59	60	61	63
Homochitto	20	30	30	31	32	38	38	63	63	59	59
Trace	0	0	0	13	14	48	50	60	64	59	63
Yalobusha	51	0	0	18	18	46	47	59	60	61	63

Figure H 15. Percent of loblolly pine forest burned in the growing season by alternative and unit

H.1.4 Slash Pine

As shown in Figure H 16 and Table H 4, alternative A does not allow for any forest management on the following units: Ackerman, Trace, and Yalobusha. In other alternatives, restoration efforts will take longer on some units than on others depending on amount, age, and condition of slash pine forest to restore to desirable ecosystems. For example, on the Ackerman, Trace, and Yalobusha units, restoration of slash

pine to native ecosystems is not as urgently needed as on other units where upland longleaf restoration is a high priority. These units also contain very little slash pine forest and therefore are not represented in many scoring datasets.

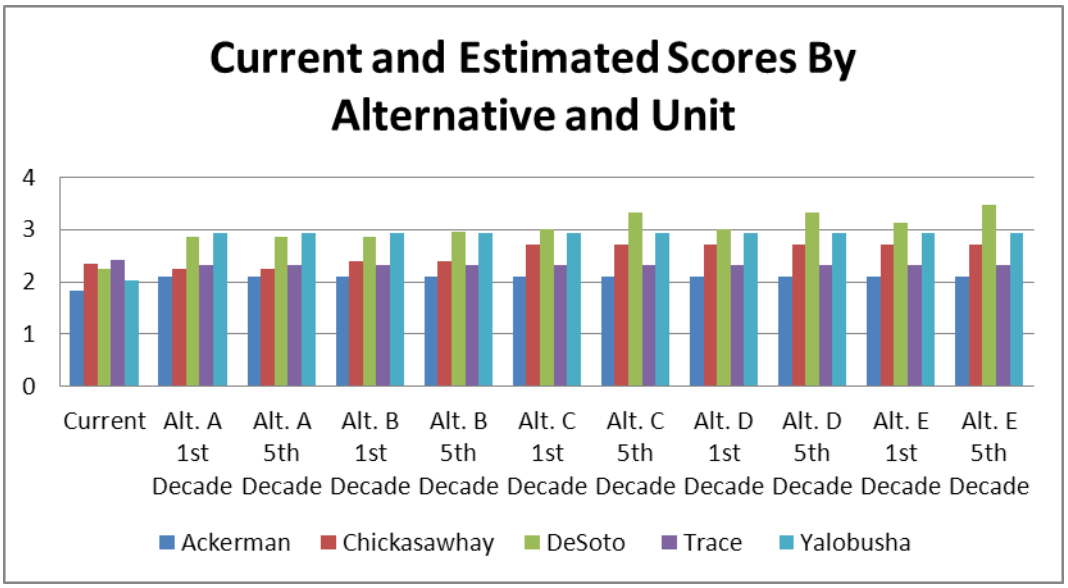


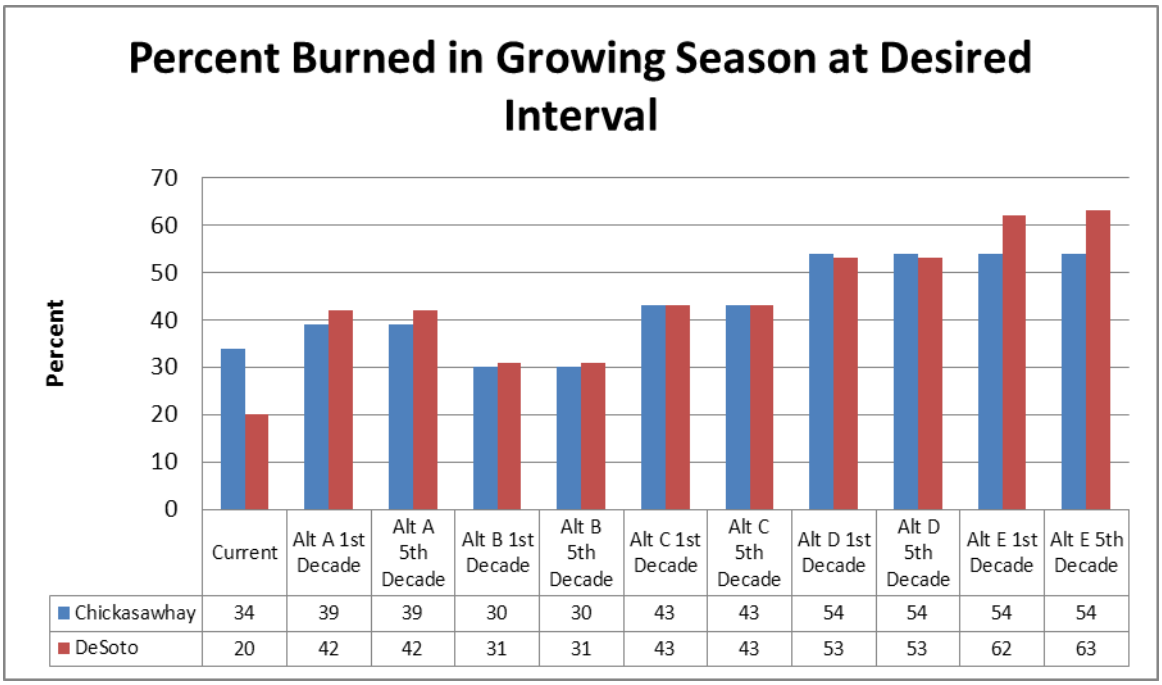
Figure H 16. Slash pine forest ecological sustainability evaluation scores by alternative and unit

Table H 4. Slash pine forest ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Ackerman	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
	1.83	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09
Chickasawhay	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Good	Good	Good
	2.34	2.24	2.24	2.40	2.40	2.72	2.72	2.72	2.72	2.72	2.72
De Soto	Fair	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.25	2.72	2.72	2.72	2.84	2.88	3.24	2.88	3.24	3.04	3.40
Trace	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
	2.41	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09
Yalobusha	Fair	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.03	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71

The primary key attributes and corresponding actions to assure the ecological sustainability are as follows:

- Percent acres in appropriate system type (including acres restored to native system types) (Figure H 17)
- Percent of occurrences in mature open canopy conditions (Figure H 18)
- Percent acres burned at the desired interval and seasonality/intensity (Figure H 19 and Figure H 20).



	Current	Alt A 1st Decade	Alt A 5th Decade	Alt B 1st Decade	Alt B 5th Decade	Alt C 1st Decade	Alt C 5th Decade	Alt D 1st Decade	Alt D 5th Decade	Alt E 1st Decade	Alt E 5th Decade
Chickasawhay	34	39	39	30	30	43	43	54	54	54	54
DeSoto	20	42	42	31	31	43	43	53	53	62	63

Figure H 17. Slash pine forest percent burned in growing season at desired interval

As slash pine forests are restored to native ecosystems (Figure H 18), the remaining slash pine forest acreage decreases becoming easier to manage for desired structural conditions (Figure H 19). Where slash pine forest currently exists or is not yet restored at any given time, the desired condition of occurrences is canopy closure of less than 80 percent and trees 60 years old and older in order to achieve high function conditions that emulate mature native ecosystem types such as longleaf. Under all alternatives, occurrences extant at any given time do not, in most cases, meet the criteria for mature open conditions based on thinning, with the exception of the Chickasawhay Unit in the 5th decade of alternative E. Due to the massive spatial extent of slash pine forest on some southern units, thinning operations are unlikely to be completed prior to restoration of longleaf. Thinned slash pine forest tends to revert to closed canopy conditions over time if not periodically re-thinned thus creating a cycle of thinning needs that is extremely difficult to successfully meet at the scale required.

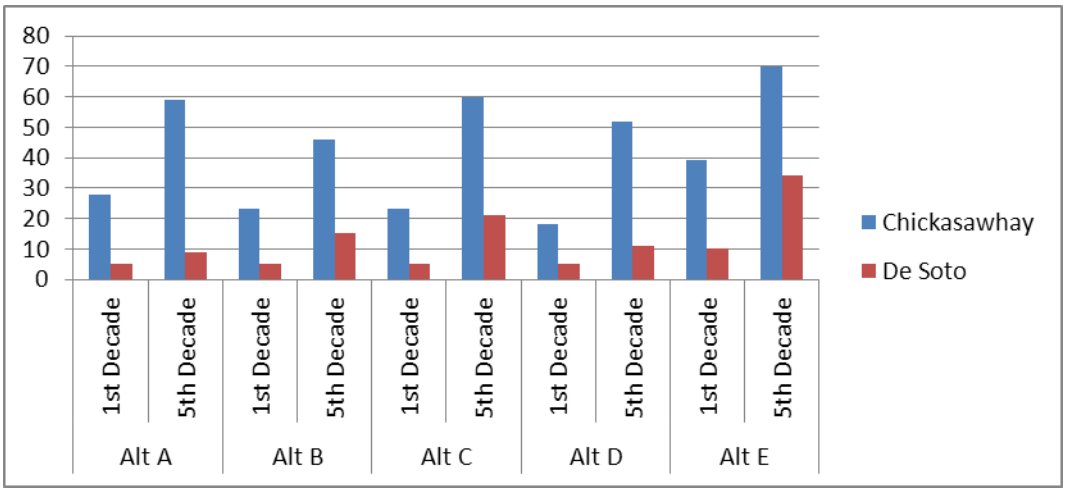
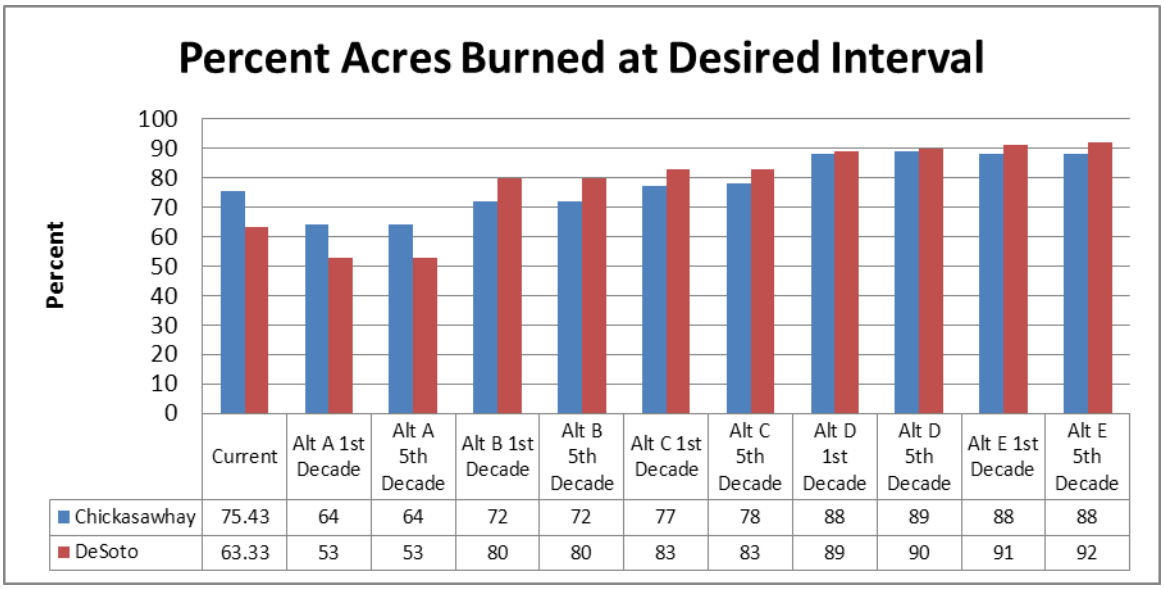
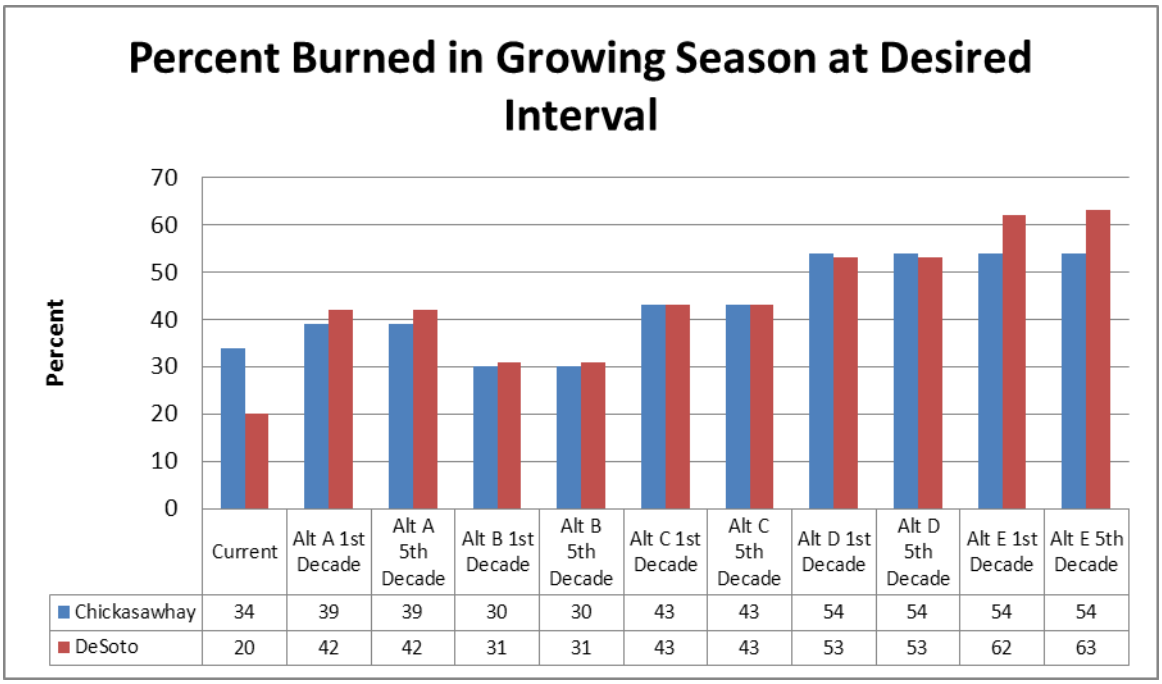


Figure H 18. Percent of slash pine forest in mature open (high function) condition



	Current	Alt A 1st Decade	Alt A 5th Decade	Alt B 1st Decade	Alt B 5th Decade	Alt C 1st Decade	Alt C 5th Decade	Alt D 1st Decade	Alt D 5th Decade	Alt E 1st Decade	Alt E 5th Decade
Chickasawhay	75.43	64	64	72	72	77	78	88	89	88	88
DeSoto	63.33	53	53	80	80	83	83	89	90	91	92

Figure H 19. Percent of slash pine forest burned at desired interval by alternative and unit



	Current	Alt A 1st Decade	Alt A 5th Decade	Alt B 1st Decade	Alt B 5th Decade	Alt C 1st Decade	Alt C 5th Decade	Alt D 1st Decade	Alt D 5th Decade	Alt E 1st Decade	Alt E 5th Decade
Chickasawhay	34	39	39	30	30	43	43	54	54	54	54
DeSoto	20	42	42	31	31	43	43	53	53	62	63

Figure H 20. Percent of slash pine forest burned in the growing season by alternative and unit

The following units contained very small amounts of slash pine and were not used to calculate scores for fire regime: Ackerman, Trace, and Yalobusha. Only the Chickasawhay and the De Soto were evaluated for fire regime scores.

Fire frequency and seasonality/intensity goals also become easier as slash pine forest coverage decreases. Frequency goals are met with all alternatives on both units scoring “good” or “very good” with the highest scores concentrated in alternatives C, D, and E.

Alternative A meets good status by the 5th decade for seasonality/intensity. Alternative B achieves only fair status for fire seasonality/intensity. All other alternatives show general improvement in fire seasonality/intensity by the 1st decade achieving "good" scores and in some cases "very good" by the 5th decade.

H.1.5 Northern Dry Upland Hardwood Forest

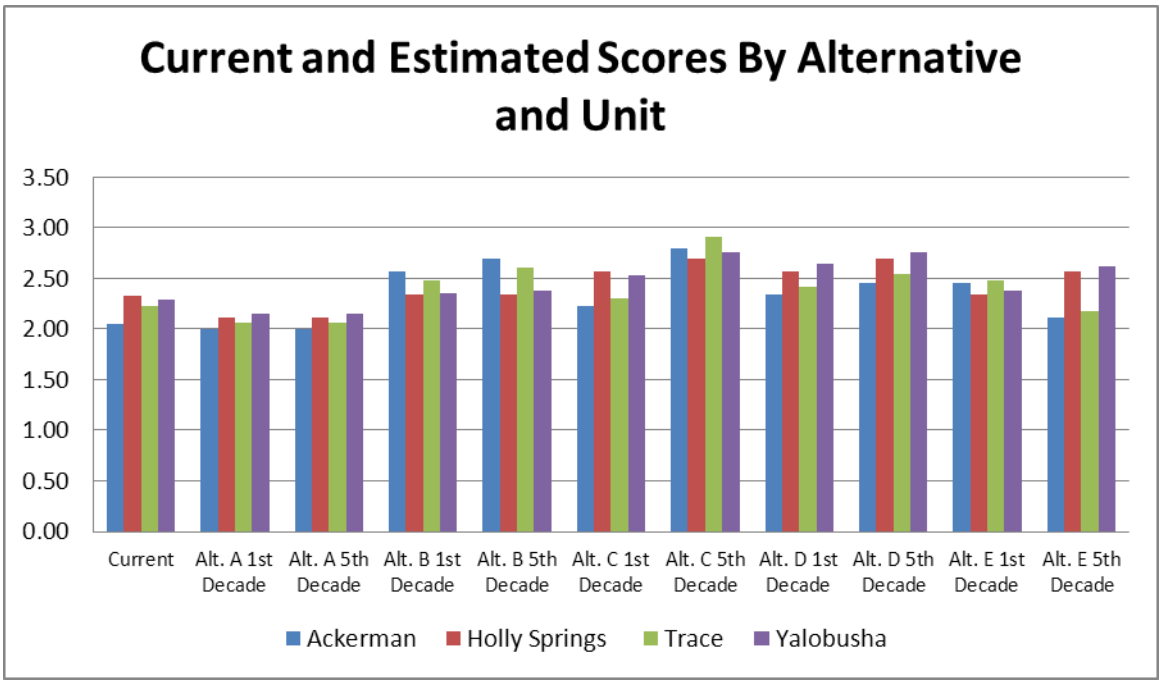


Figure H 21. Northern dry upland hardwood forest ecological sustainability evaluation scores by alternative and unit

Table H 5. Northern dry upland hardwood forest ecological sustainability evaluation scores and rankings by unit and alternative

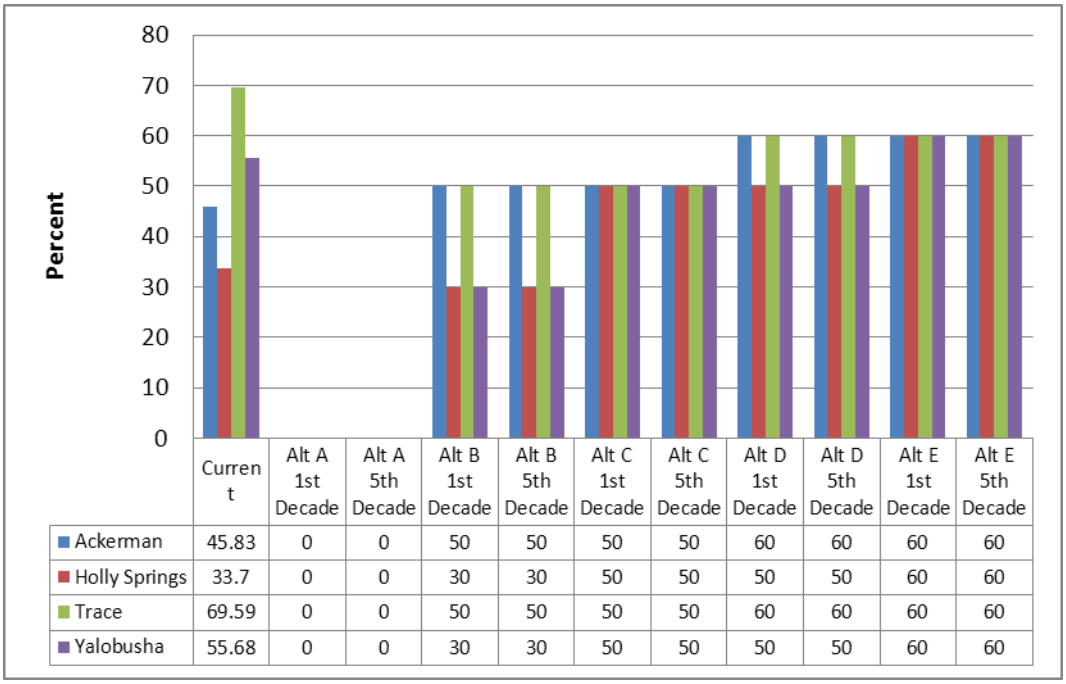
Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Ackerman	Fair	2.00	Fair	Good	Good	Fair	Good	Fair	Fair	Fair	Fair
	2.05	2.00	2.00	2.57	2.69	2.23	2.80	2.34	2.46	2.46	2.11
Holly Springs	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good
	2.33	2.11	2.11	2.34	2.34	2.57	2.69	2.57	2.69	2.34	2.57
Trace	Fair	Fair	Fair	Fair	Good	Fair	Good	Fair	Good	Fair	Fair
	2.23	2.06	2.06	2.48	2.61	2.30	2.91	2.42	2.55	2.48	2.18
Yalobusha	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good
	2.29	2.15	2.15	2.35	2.38	2.53	2.76	2.65	2.76	2.38	2.62

The primary key attributes and corresponding actions to assure the ecological sustainability are as follows:

- Percent acres burned at the desired interval and seasonality/intensity (Figure H 22).

- Percent acres in appropriate system type (including acres restored from previously converted system types) (Figure H 23)
- Percent of occurrences in mature condition (Figure H 24)

Northern dry upland hardwoods are generally intermingled among the dominant pine ecosystems. As a result, this system will be exposed to prescribed fire with the same frequency and seasonality/intensity. Because this system burns less readily than the surrounding pine dominated systems, it is difficult to predict whether or not upland hardwoods will actually burn when exposed to fire. While it is fairly easy to predict interval of fire exposure, the actual burn rates may vary. It is especially difficult to predict seasonality/intensity due to the differences in ground cover moisture regimes between upland hardwoods and surrounding pine systems. It is considered natural and an ecologically appropriate attribute of fire behavior for embedded hardwood communities to burn at rates lower than fire exposure rates. Figure H 22 shows exposure to fire at desired interval by alternative and unit. Due to the challenges described above, fire frequency/seasonality cannot be predicted with confidence and is not shown. Alternative A includes no prescribed fire for this ecosystem. Alternative B meets the lower end of "fair" on the Holly Springs and Yalobusha units while meeting the upper end of "fair" on the Ackerman and Trace units concerning burn interval. Alternative C allows for increased fire frequency compared to the latter alternatives but only reaches the upper end of "fair" value. Alternative D meets the upper end of "fair" on the Holly Springs and Yalobusha units while meeting "good" on the Ackerman and Trace units concerning burn interval. Alternative E meets "good" on all units.



	Current	Alt A 1st Decade	Alt A 5th Decade	Alt B 1st Decade	Alt B 5th Decade	Alt C 1st Decade	Alt C 5th Decade	Alt D 1st Decade	Alt D 5th Decade	Alt E 1st Decade	Alt E 5th Decade
Ackerman	45.83	0	0	50	50	50	50	60	60	60	60
Holly Springs	33.7	0	0	30	30	50	50	50	50	60	60
Trace	69.59	0	0	50	50	50	50	60	60	60	60
Yalobusha	55.68	0	0	30	30	50	50	50	50	60	60

Figure H 22. Percent of northern dry upland hardwood forest exposed to fire at desired interval by alternative and unit

Alternative A shows a "poor" rating even after the 5th decade for percent of suitable acres occupied by appropriate ecosystem in Figure H 23 below. Alternatives B, C, and E reach a "fair" rating by the 5th decade of each while alternative D reaches a "good" rating in the Trace and Ackerman units in the 5th decade. The reasoning behind this system not reaching a sustainable level across all units by alternative for the most part is due to Forest priorities of upland longleaf restoration and management of threatened and endangered species which are not associated with this system.

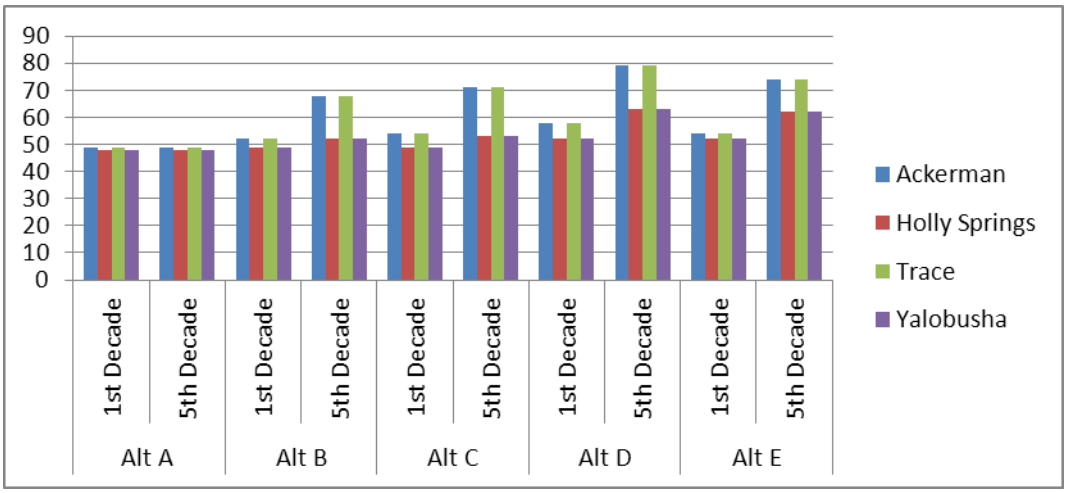


Figure H 23. Percent of northern dry upland hardwood forest in appropriate system by alternative and unit

The amount of mature forest in this ecosystem is an important attribute that demonstrates the amount of age structure distribution of the ecosystem (Figure H 24). All alternatives are in "poor" condition in the 1st decade for all units. Alternative A continues to increase in percent mature forest in the 5th decade which increases the "poor" rating. This is due to no management of this ecosystem in this alternative. Alternatives B, D, and E all reach a "fair" attribute rating by the 5th decade while alternative C reaches a "very good" rating in the Ackerman and Trace units showing sustainability of this attribute while the Yalobusha and Holly Springs units only reach a "fair" rating.

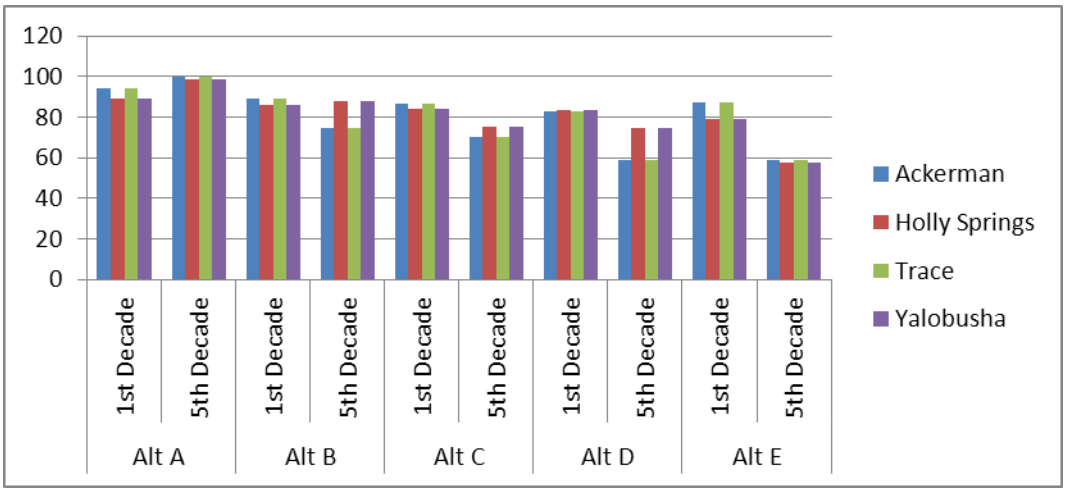


Figure H 24. Percent of northern dry upland hardwood forest in mature forest

H.1.6 Southern Dry Upland Hardwood Forest

As shown in Figure H 25 and Table H 6, all alternative scores by decade remain with a "good" overall ecological sustainability evaluation score despite little management due to few management needs for this system.

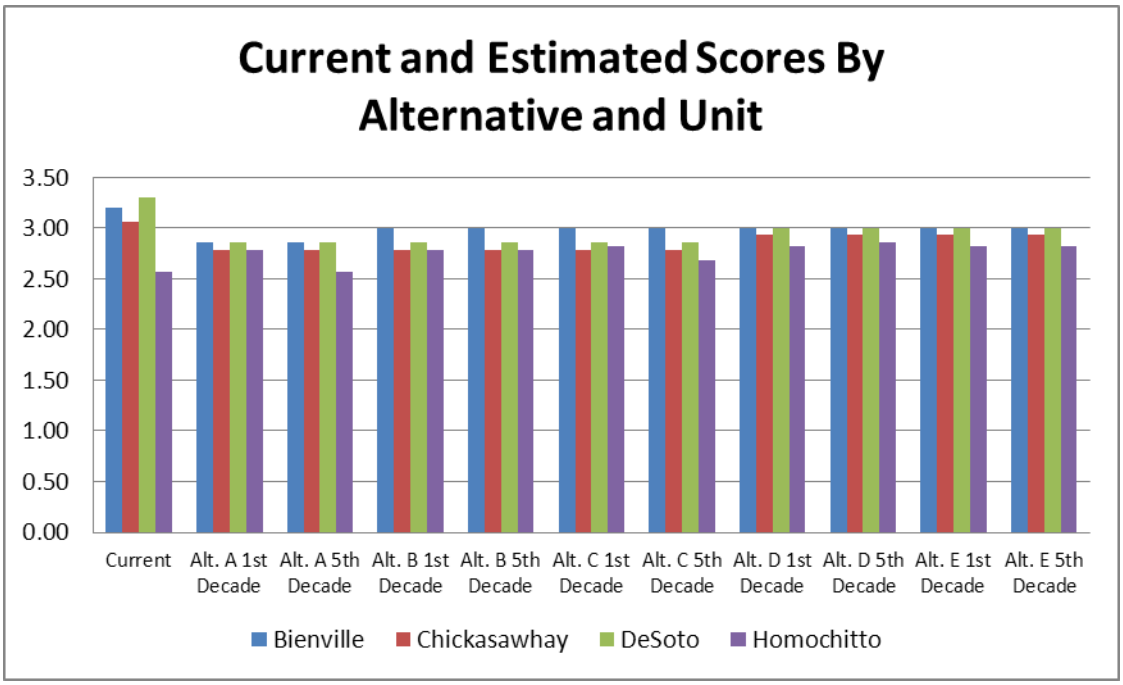


Figure H 25. Southern dry upland hardwood forest ecological sustainability evaluation scores by alternative and unit

Table H 6. Southern dry upland hardwood forest ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Bienville	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.20	2.86	2.86	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Chickasawhay	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.06	2.79	2.79	2.79	2.79	2.79	2.79	2.93	2.93	2.93	2.93
De Soto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.30	2.86	2.86	2.86	2.86	2.86	2.86	3.00	3.00	3.00	3.00
Homochitto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.57	2.79	2.57	2.79	2.79	2.82	2.68	2.82	2.86	2.82	2.82
Bienville	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.94	2.75	2.54	2.75	2.54	2.75	2.54	2.75	2.72	2.86	2.64

The primary key attributes and corresponding actions to assure the ecological sustainability are as follows:

- Percent acres in appropriate system type (including acres restored from previously converted system types) (Figure H 26)

As seen in Figure H 26, the percent of southern dry upland hardwood forest in appropriate system does not change in each unit by alternative and time. This ecosystem is not the highest priority to restore to appropriate system on the Forests. The Bienville, Chickasawhay, and De Soto units are all rated "very

good" for this attribute. The Homochitto will remain poor concerning percent of ecosystem in appropriate system due to priority on this unit is upland longleaf restoration.

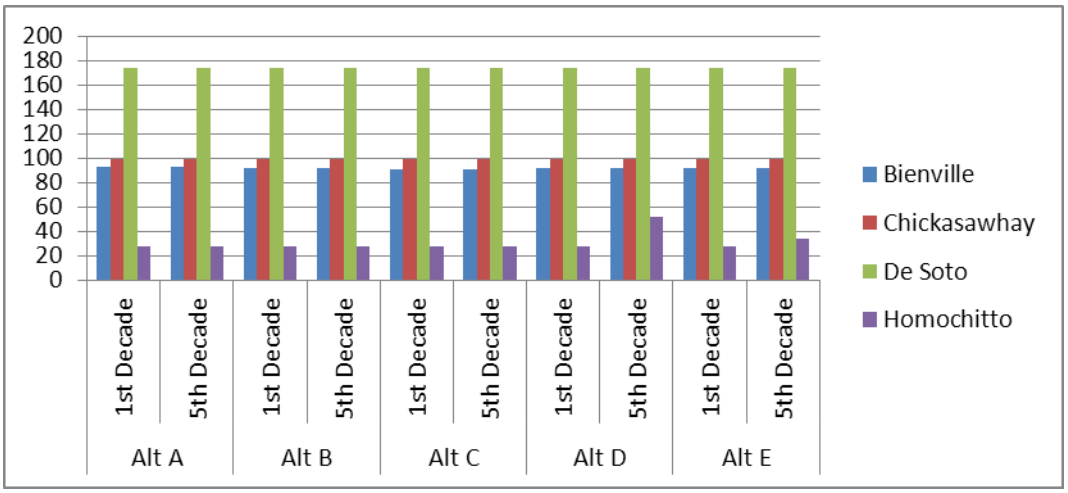


Figure H 26. Percent of southern dry upland hardwood forest at appropriate system by alternative and unit

H.1.7 Southern Mesic Slope Forest

As shown in Figure H 27 and Table H 7, all alternative scores by decade remain with a "good" overall ESE score despite little management due to few management needs for this system.

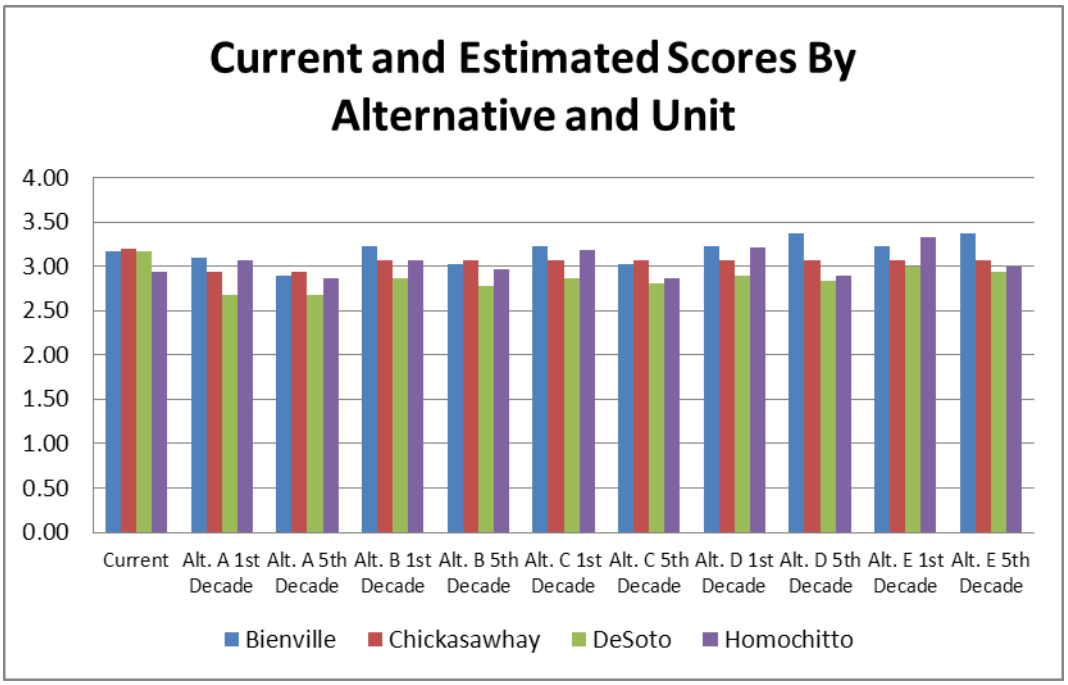


Figure H 27. Southern mesic slope forest ecological sustainability evaluation scores by alternative and unit

Table H 7. Southern mesic slope forest ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Bienville	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.17	3.10	2.90	3.23	3.03	3.23	3.03	3.23	3.37	3.23	3.37
Chickasawhay	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.20	2.93	2.93	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07
De Soto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.17	2.67	2.67	2.87	2.77	2.87	2.80	2.90	2.83	3.00	2.93
Homochitto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.94	3.07	2.86	3.07	2.96	3.18	2.86	3.21	2.89	3.32	3.00

The primary key attribute and corresponding action to assure ecological sustainability for this ecosystem is percent acres in appropriate system type (including acres restored from previously converted system types) (Figure H 28).

As seen in Figure H 28, the ratings for percent of southern mesic slope forest in appropriate system do not change from "fair" on the Chickasawhay and Homochitto units by alternative and time. This ecosystem is not a high priority to restore to appropriate system on these units. This attribute remains "poor" in alternatives A and B on the De Soto unit and becomes "fair" in alternatives C, D, and E which can be attributed to conversion from slash pine forest to appropriate systems in the latter alternatives. On the Bienville unit, alternatives A, B, and C are all rated as "good" for each time interval because the system on this unit is already in "good" condition and no change is expected. Alternatives D and E become "very good" through time since both alternatives are driven by increased restoration and/or increased timber management.

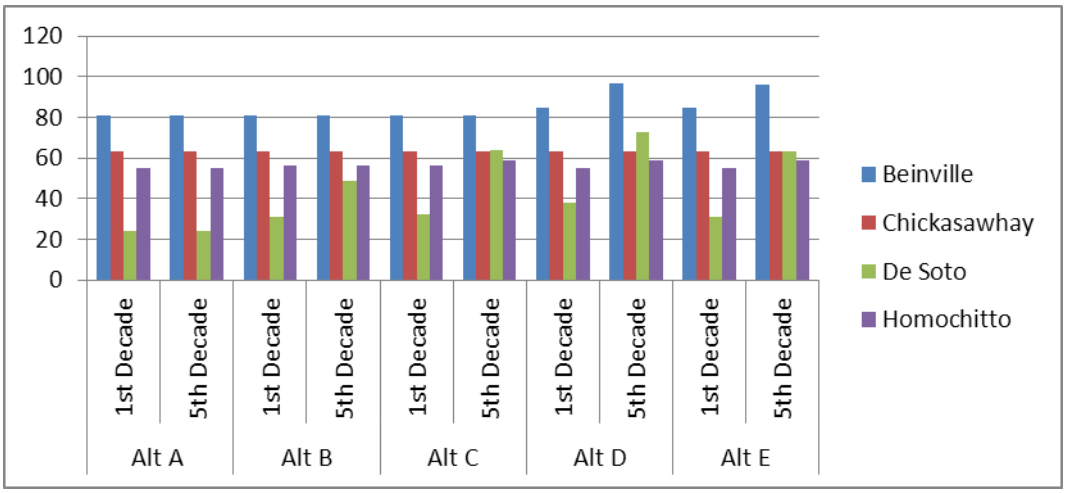


Figure H 28. Percent of southern mesic slope forest at appropriate system by alternative and unit

H.1.8 Northern Mesic Hardwood Forest

As shown in Figure H 29 and Table H 8, all alternative scores by decade remain with a "good" overall ecological sustainability evaluation score despite little management due to few management needs for this system.

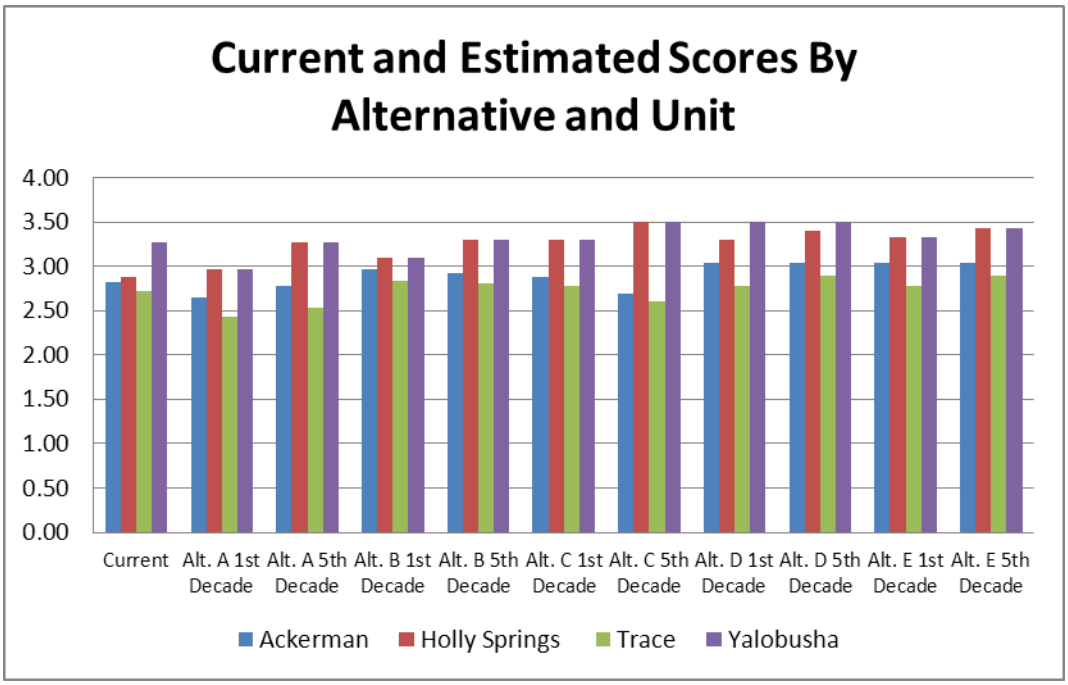


Figure H 29. Northern mesic hardwood forest ecological sustainability evaluation scores by alternative and unit

Table H 8. Northern mesic hardwood forest ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Ackerman	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.82	2.65	2.77	2.96	2.92	2.88	2.69	3.04	3.04	3.04	3.04
Holly Springs	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.88	2.97	3.27	3.10	3.30	3.30	3.50	3.30	3.40	3.33	3.43
Trace	Good	Fair	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.72	2.43	2.53	2.83	2.80	2.77	2.60	2.77	2.90	2.77	2.90
Yalobusha	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.27	2.97	3.27	3.10	3.30	3.30	3.50	3.50	3.50	3.33	3.43

The primary key attribute and corresponding action to assure ecological sustainability for this ecosystem is percent acres in appropriate system type (including acres restored from previously converted system types) (Figure H 30).

As seen in Figure H 30, the ratings for percent of northern mesic slope forest in appropriate system do not change from “poor” in alternative A while changes are seen with this attribute to “fair” in alternatives B, C, D, and E on the Ackerman and Trace units in the 5th decade. This attribute remains “very good” in all alternatives on the Holly Springs and Yalobusha units through time since the percent of this system in appropriate acres goals have already been reached and will not significantly change by alternative and time.

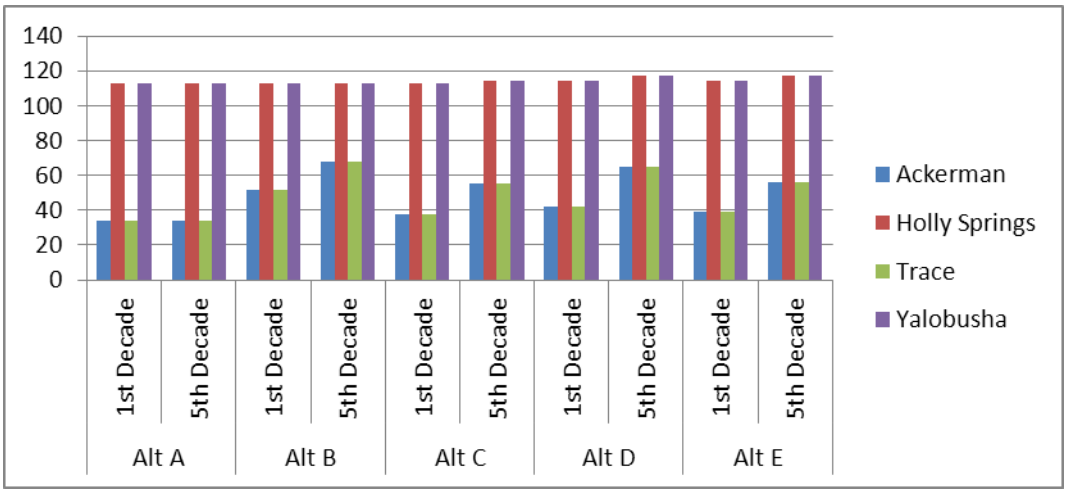


Figure H 30. Percent of northern mesic slope forest at appropriate system by alternative and unit

H.1.9 Floodplain Forest

As shown in Figure H 31 and Table H 9, all alternative scores by decade remain with a "good" overall ecological sustainability evaluation score despite little management due to few management needs for this system.

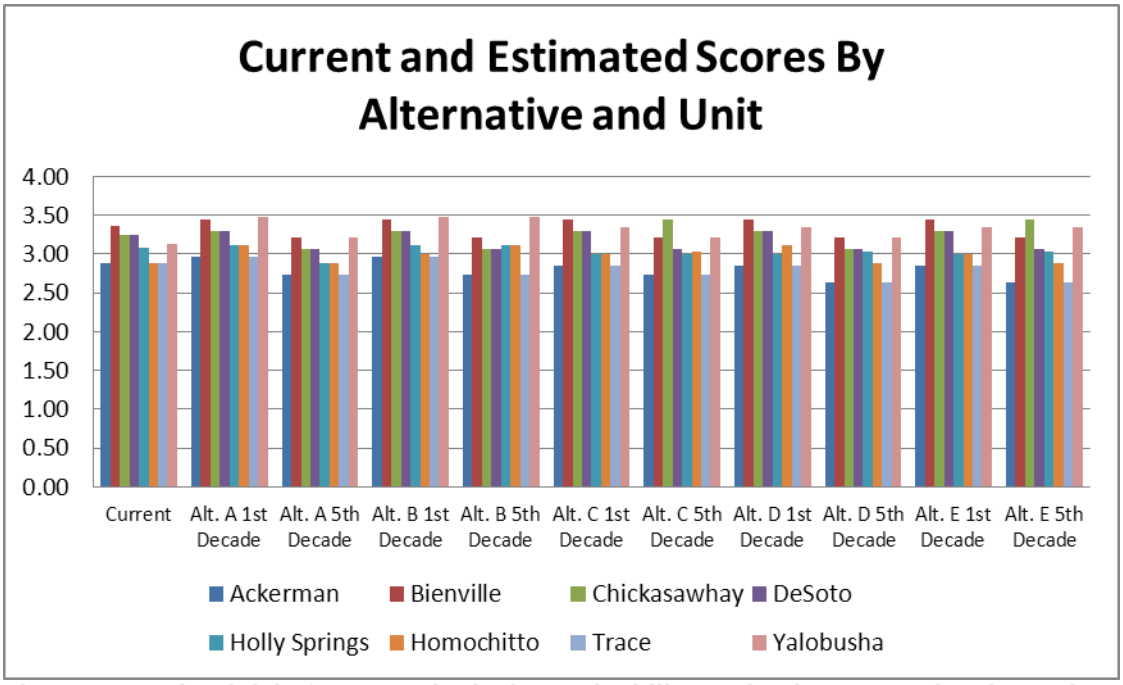


Figure H 31. Floodplain forest ecological sustainability evaluation scores by alternative and unit

Table H 9. Floodplain forest ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Ackerman	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.88	2.96	2.74	2.96	2.74	2.85	2.74	2.85	2.63	2.85	2.63
Bienville	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.36	3.44	3.22	3.44	3.22	3.44	3.22	3.44	3.22	3.44	3.22
Chickasawhay	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.24	3.30	3.07	3.30	3.07	3.30	3.44	3.30	3.07	3.30	3.44
De Soto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.24	3.30	3.07	3.30	3.07	3.30	3.07	3.30	3.07	3.30	3.07
Holly Springs	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.08	3.11	2.89	3.11	3.11	3.00	3.00	3.00	3.04	3.00	3.04
Homochitto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.89	3.11	2.89	3.00	3.11	3.00	3.04	3.11	2.89	3.00	2.89
Trace	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.88	2.96	2.74	2.96	2.74	2.85	2.74	2.85	2.63	2.85	2.63
Yalobusha	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.13	3.48	3.22	3.48	3.48	3.35	3.22	3.35	3.22	3.35	3.35

The primary key attribute and corresponding action to assure ecological sustainability for this ecosystem is percent acres in appropriate system type (including acres restored from previously converted system types) (Figure H 32).

As seen in Figure H 32, the ratings for percent of floodplain forest in appropriate system do not change from “poor” in all alternatives on the Ackerman, De Soto, and Trace units and remain “fair” on the Bienville for all alternatives. These units show no change by alternative because floodplain forest restoration is not a priority for these units. On the Holly Springs and Yalobusha units, this attribute remains at “poor” in alternatives A, B, and C while and becomes “fair” condition in alternatives D and E which shows that some offsite pine will be restored to this ecosystem in these accelerated restoration and enhanced forest health alternatives. Alternative C shows changes in the Homochitto and Chickasawhay units from “poor” to “fair” which is expected with the all of the offsite pine being restored to natural systems. The Homochitto unit also shows a rating of “fair” in alternative D for the same reason. Since priorities are to restore offsite pine to appropriate systems in alternatives C, D, and E and to some extent in alternative B, this ecosystem is not expected to change much in relation to this attribute in the next half century.

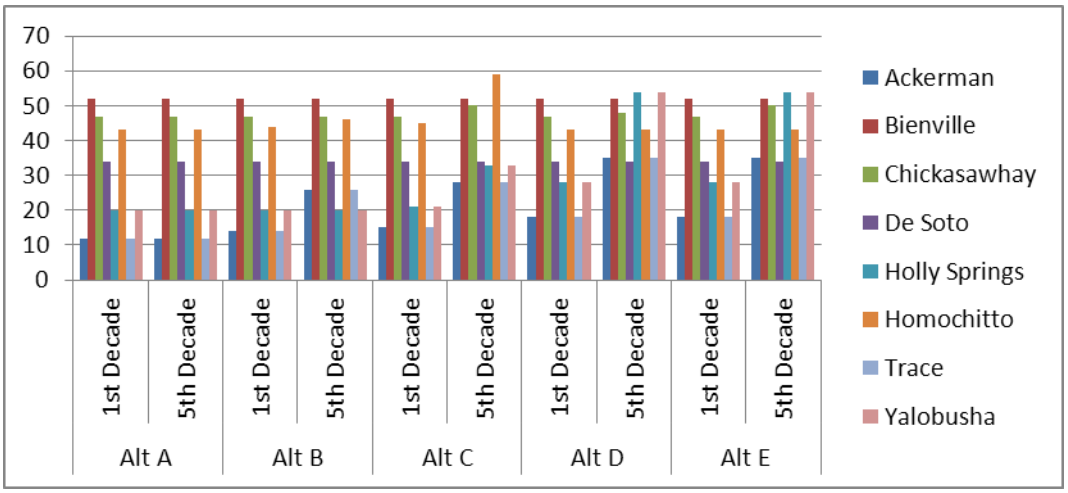
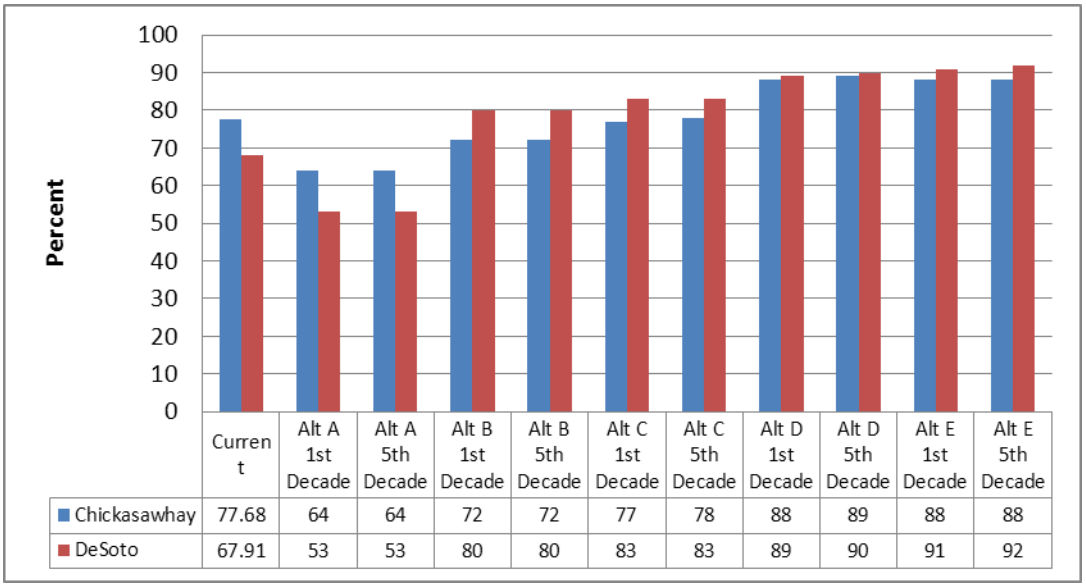


Figure H 32. Percent of floodplain forest at appropriate system by alternative and unit

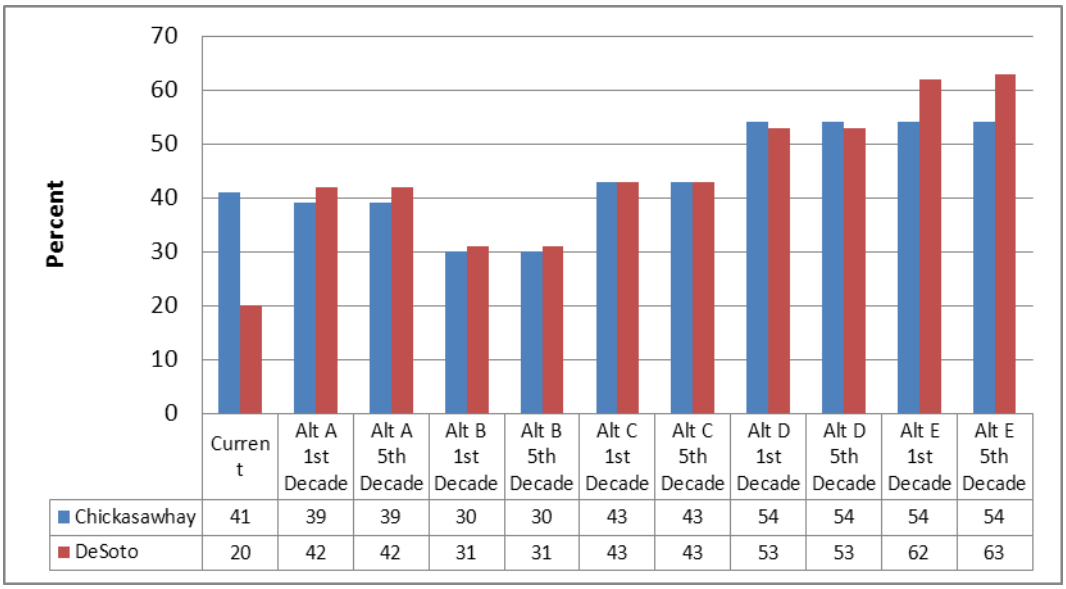
H.1.10 Xeric Sandhills

Figure H 33 and Figure H 34 show fire regime variables by alternative. Herbaceous dominated understories, including grasses and forbs, are important attributes of healthy longleaf ecosystems best achieved by the application of frequent growing season fire, ideally once every 1 to 3 years (desired interval). These data show that both fire frequency and seasonality/intensity, in most cases, are well within the "good" to "very good" range and increase respectively from alternatives C thru E.



	Current	Alt A 1st Decade	Alt A 5th Decade	Alt B 1st Decade	Alt B 5th Decade	Alt C 1st Decade	Alt C 5th Decade	Alt D 1st Decade	Alt D 5th Decade	Alt E 1st Decade	Alt E 5th Decade
Chickasawhay	77.68	64	64	72	72	77	78	88	89	88	88
DeSoto	67.91	53	53	80	80	83	83	89	90	91	92

Figure H 33. Percent of xeric sandhills burned at desired interval by alternative and unit



	Current	Alt A 1st Decade	Alt A 5th Decade	Alt B 1st Decade	Alt B 5th Decade	Alt C 1st Decade	Alt C 5th Decade	Alt D 1st Decade	Alt D 5th Decade	Alt E 1st Decade	Alt E 5th Decade
Chickasawhay	41	39	39	30	30	43	43	54	54	54	54
DeSoto	20	42	42	31	31	43	43	53	53	62	63

Figure H 34. Percent of xeric sandhills burned in the growing season by alternative and unit

H.1.11 Cypress Dominated Wetlands

All overall ecological sustainability evaluation scores were calculated as "good" for this system for all alternatives and all time intervals (Figure H 35 and Table H 10). There are many data needs for this system including location and size of this system across the Forests.

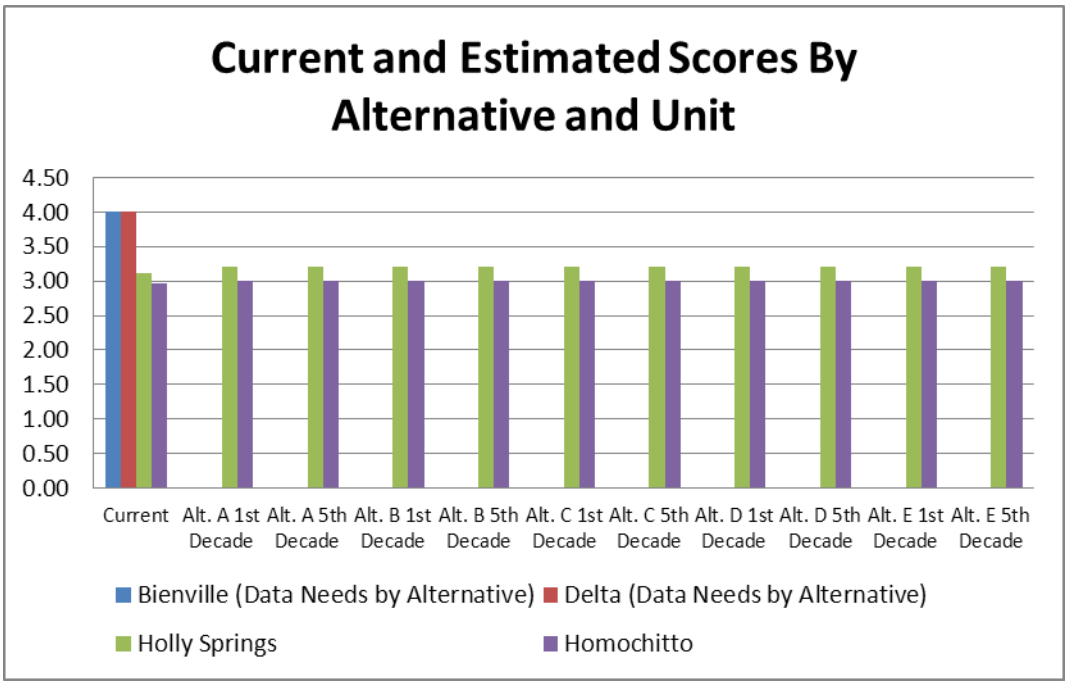


Figure H 35. Cypress dominated wetlands ecological sustainability evaluation scores by alternative and unit

Table H 10. Cypress dominated wetlands ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Bienville	4.00	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need
Delta	4.00	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need
Holly Springs	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.12	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
Homochitto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.97	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

H.1.12 Seeps, Springs, and Seepage Swamps

Ecological sustainability evaluation scores were calculated as "good" for all alternatives and all time intervals where data was available among units and rated as "good" and "very good" with no differences for each between alternatives (Table H 11). There are many data needs for this system including location and size of this system across the Forests.

Table H 11. Seeps, springs, and seepage swamps ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Ackerman	1.00	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need
Bienville	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.74	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
Chickasawhay	Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good
	3.12	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56
De Soto	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good
	3.59	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Holly Springs	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.86	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94
Homochitto	Fair	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.36	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12
Trace	2.80	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need
Yalobusha	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.87	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12

H.1.13 Herbaceous Seepage Bogs and Flats

Ecological sustainability evaluation scores were calculated as "good" with no differences between alternatives and time intervals where data was available (Table H 12). There are many data needs for this system including location and size of this system across the Forests.

Table H 12. Herbaceous seepage bogs and flats ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Chickasawhay	2.71	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need
De Soto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.80	2.91	2.91	3.26	3.26	3.26	3.26	3.39	3.39	3.39	3.39

Figure H 36 and Figure H 37 show fire regime variables by alternative. Open canopy and herbaceous dominated under-stories, including grasses and forbs, are important attributes of healthy herbaceous seepage bogs and flats best achieved by the application of frequent fire, ideally once every 1 to 3 years (desired interval). Figure H 36 shows that fire frequency is well within the "very good" range in alternatives B thru E while alternative A only reaches "fair."

Prescribed fire, as stated previously, plays an integral part of restoring this ecosystem. Growing season prescribed fire (Figure H 37) differs between alternatives. Alternatives A, B and C score "fair" although the actual value of alternative C (40 percent) does meet minimum desired condition. Both alternatives D and E obtain a "good" rating for this attribute.

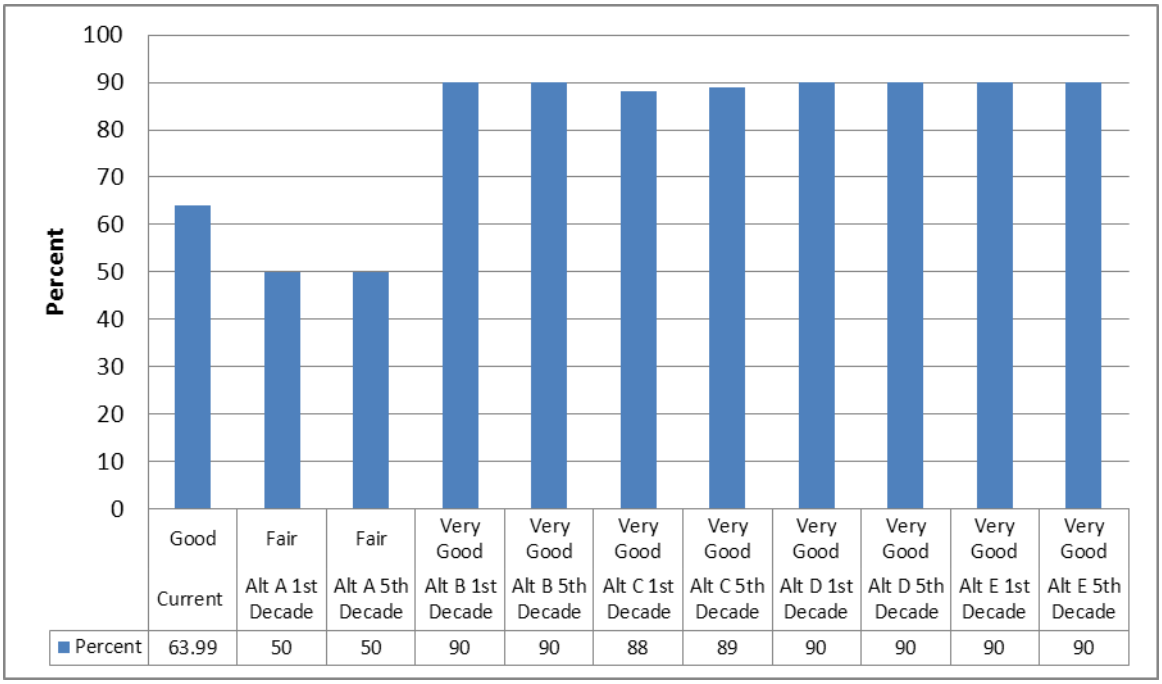


Figure H 36. Percent of herbaceous seepage bogs and flats burned at desired interval by alternative

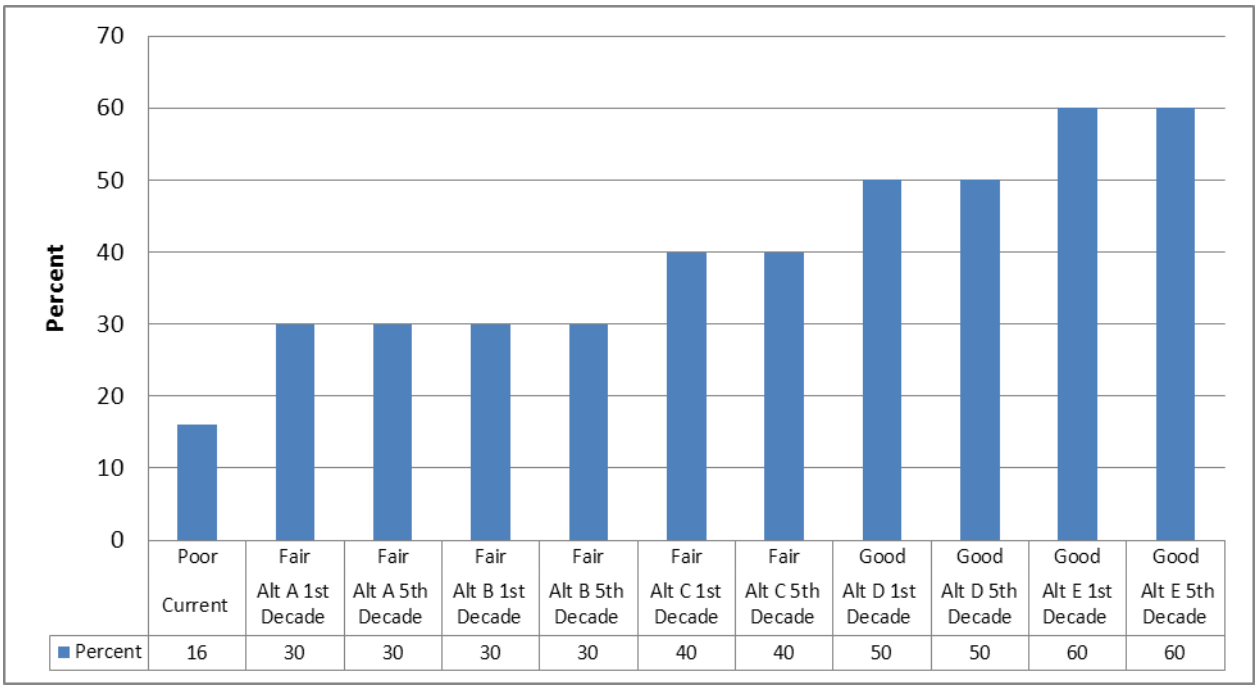


Figure H 37. Percent of herbaceous seepage bogs and flats burned in the growing season by alternative

H.2 Species Groups and Associations

H.2.1 Herbaceous Seepage Bogs and Flats Associates

Table H 13. Herbaceous seepage bogs and flats associates ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Chickasawhay	2.71	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need	Data Need
De Soto	2.78	2.80	2.80	3.20	3.20	3.20	3.20	3.40	3.40	3.40	3.40

H.2.2 Mature Mesic Deciduous Forest Associates

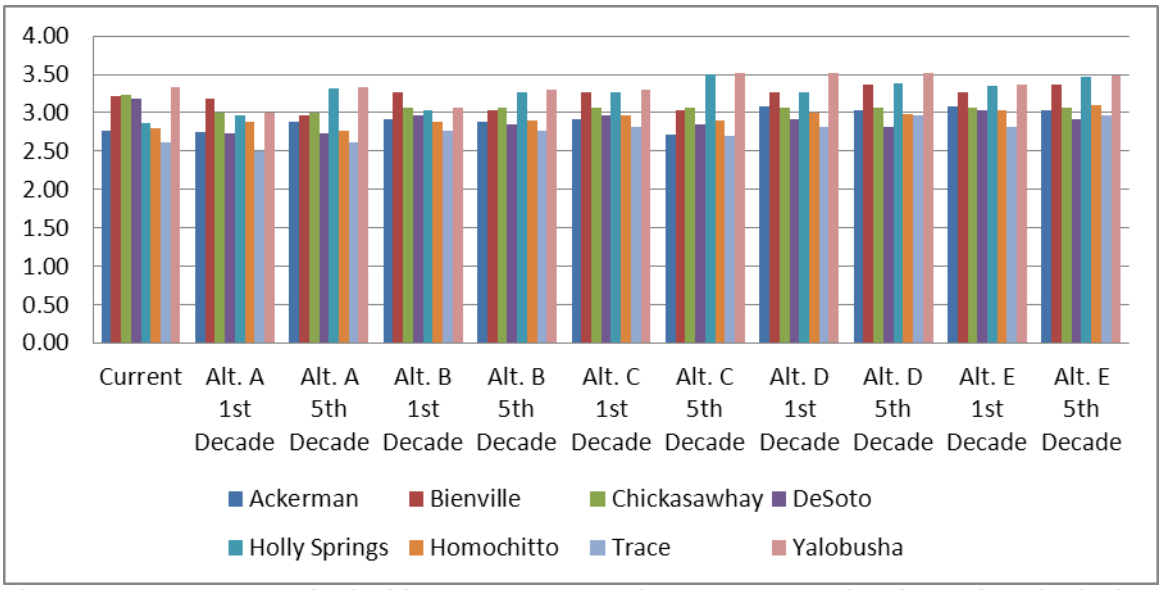


Figure H 38. Mature mesic deciduous forest associates current and estimated ecological sustainability evaluation scores by unit and alternative

Table H 14. Mature mesic deciduous forest associates ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Ackerman	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.77	2.75	2.88	2.92	2.88	2.92	2.71	3.08	3.04	3.08	3.04
Bienville	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.21	3.19	2.96	3.26	3.04	3.26	3.04	3.26	3.37	3.26	3.37
Chickasawhay	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.24	3.00	3.00	3.07	3.07	3.07	3.07	3.07	3.07	3.07	3.07
De Soto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.18	2.73	2.73	2.96	2.85	2.96	2.85	2.92	2.81	3.04	2.92
Holly Springs	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.86	2.96	3.31	3.04	3.27	3.27	3.50	3.27	3.38	3.35	3.46
Homochitto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.79	2.88	2.77	2.88	2.90	2.96	2.90	3.00	2.98	3.04	3.10
Trace	Good	Fair	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.61	2.50	2.62	2.77	2.77	2.81	2.69	2.81	2.96	2.81	2.96
Yalobusha	Good	Good	Good	Good	Good	Good	Very Good	Very Good	Very Good	Good	Good
	3.34	3.00	3.33	3.07	3.30	3.30	3.52	3.52	3.52	3.37	3.48

H.2.3 Mature Open Pine Grass Associates

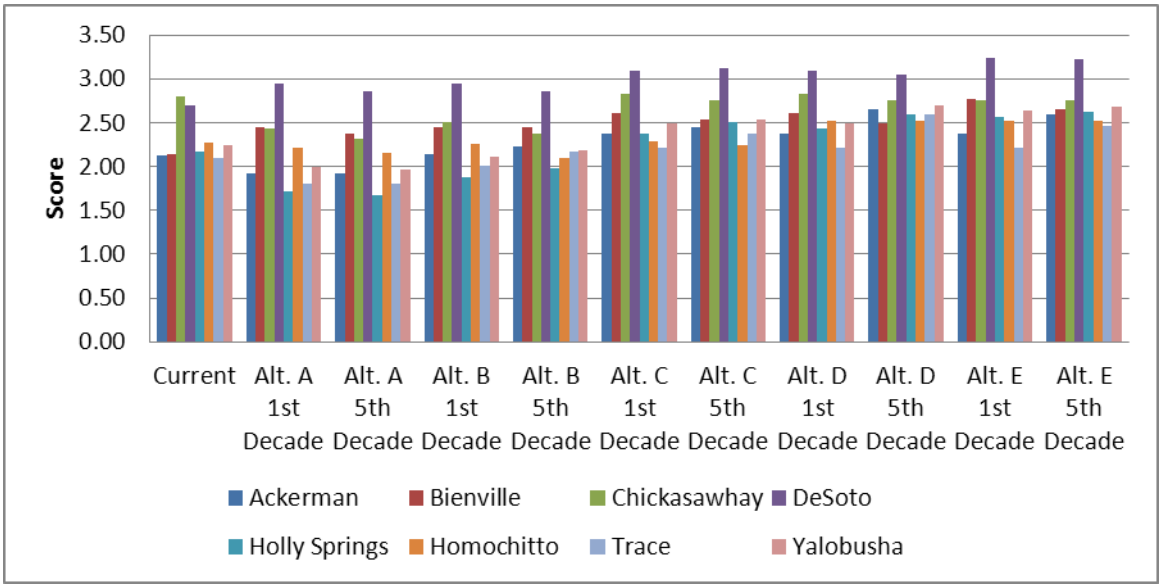


Figure H 39. Mature open pine-grass associates current and estimated ecological sustainability evaluation scores by unit and alternative

Table H 15. Mature open pine-grass associates ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Ackerman	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Fair	Good
	2.12	1.92	1.92	2.14	2.23	2.37	2.45	2.37	2.65	2.37	2.59
Bienville	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Good	Good
	2.14	2.45	2.37	2.45	2.45	2.61	2.53	2.61	2.49	2.77	2.65
Chickasawhay	Good	Fair	Fair	Fair	Fair	Good	Good	Good	Good	Good	Good
	2.80	2.44	2.32	2.50	2.38	2.83	2.75	2.83	2.75	2.75	2.75
De Soto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.69	2.94	2.86	2.94	2.86	3.09	3.12	3.09	3.05	3.24	3.22
Holly Springs	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Good
	2.17	1.72	1.67	1.87	1.98	2.37	2.50	2.43	2.59	2.57	2.63
Homochitto	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Good
	2.27	2.21	2.16	2.26	2.10	2.29	2.24	2.52	2.52	2.52	2.52
Trace	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair
	2.09	1.81	1.81	2.01	2.17	2.21	2.38	2.21	2.59	2.21	2.46
Yalobusha	Fair	Fair	Fair	Fair	Fair	Fair	Good	Fair	Good	Good	Good
	2.25	2.00	1.96	2.11	2.19	2.49	2.53	2.49	2.69	2.64	2.68

H.2.4 Mature Riparian Forest Associates

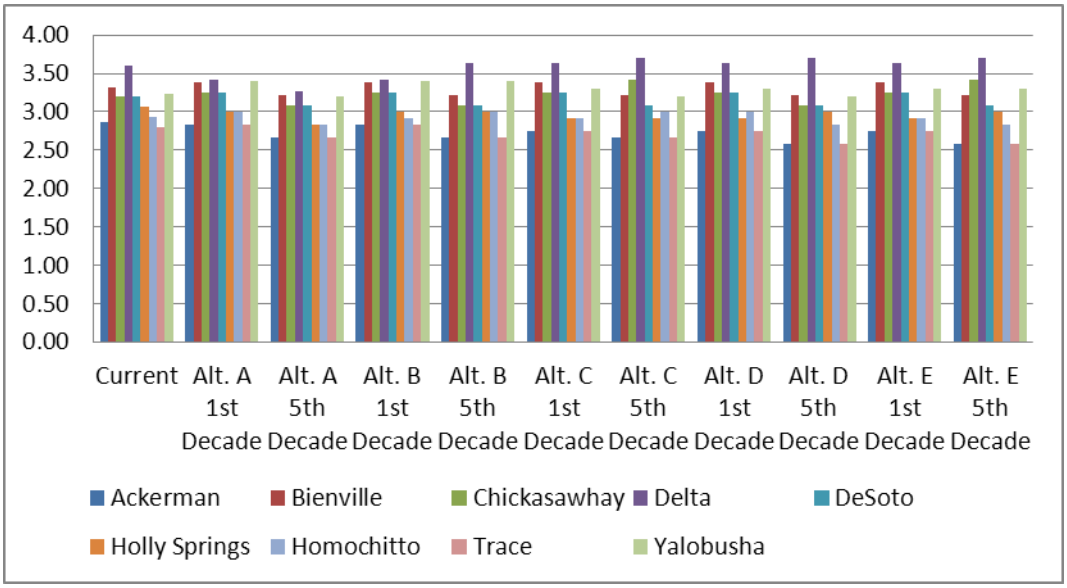


Figure H 40. Mature riparian forest associates current and estimated ecological sustainability evaluation scores by unit and alternative

Table H 16. Mature riparian forest associates ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Ackerman	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.86	2.83	2.67	2.83	2.67	2.75	2.67	2.75	2.58	2.75	2.58
Bienville	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.31	3.39	3.22	3.39	3.22	3.39	3.22	3.39	3.22	3.39	3.22
Chickasawhay	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.20	3.25	3.08	3.25	3.08	3.25	3.42	3.25	3.08	3.25	3.42
Delta	Very Good	Good	Good	Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good
	3.60	3.41	3.26	3.41	3.63	3.63	3.70	3.63	3.70	3.63	3.70
De Soto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.20	3.25	3.08	3.25	3.08	3.25	3.08	3.25	3.08	3.25	3.08
Holly Springs	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.06	3.00	2.83	3.00	3.00	2.92	2.92	2.92	3.00	2.92	3.00
Homochitto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.93	3.00	2.83	2.92	3.00	2.92	3.00	3.00	2.83	2.92	2.83
Trace	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.80	2.83	2.67	2.83	2.67	2.75	2.67	2.75	2.58	2.75	2.58
Yalobusha	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.23	3.40	3.20	3.40	3.40	3.30	3.20	3.30	3.20	3.30	3.30

H.2.5 Mature Upland Pine-Hardwood Associates

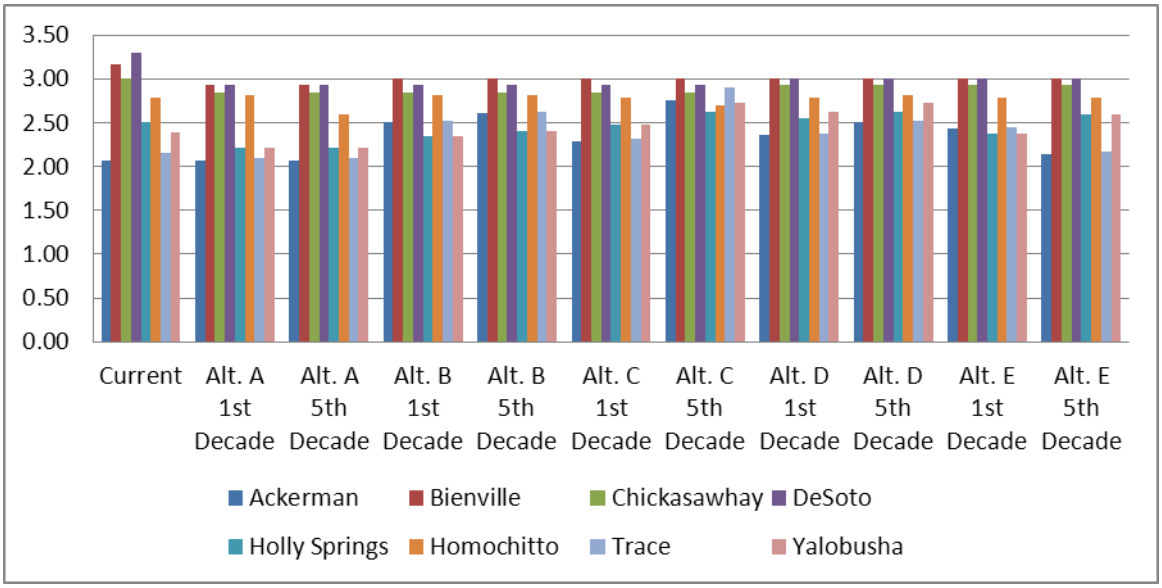


Figure H 41. Mature upland pine-hardwood associates current and estimated ecological sustainability evaluation scores by unit and alternative

Table H 17. Mature upland pine-hardwood associates ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Ackerman	Fair	Fair	Fair	Fair	Good	Fair	Good	Fair	Fair	Fair	Fair
	2.07	2.07	2.07	2.50	2.61	2.29	2.75	2.36	2.50	2.43	2.14
Bienville	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.17	2.93	2.93	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Chickasawhay	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.00	2.85	2.85	2.85	2.85	2.85	2.85	2.93	2.93	2.93	2.93
De Soto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	3.30	2.93	2.93	2.93	2.93	2.93	2.93	3.00	3.00	3.00	3.00
Holly Springs	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Good
	2.50	2.21	2.21	2.34	2.41	2.48	2.62	2.55	2.62	2.38	2.59
Homochitto	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.79	2.81	2.59	2.81	2.81	2.78	2.70	2.78	2.81	2.78	2.78
Trace	Fair	Fair	Fair	Good	Good	Fair	Good	Fair	Good	Fair	Fair
	2.16	2.10	2.10	2.52	2.62	2.31	2.90	2.38	2.52	2.45	2.17
Yalobusha	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	Fair	Good
	2.39	2.21	2.21	2.34	2.41	2.48	2.72	2.62	2.72	2.38	2.59

H.2.6 Prairie Associates

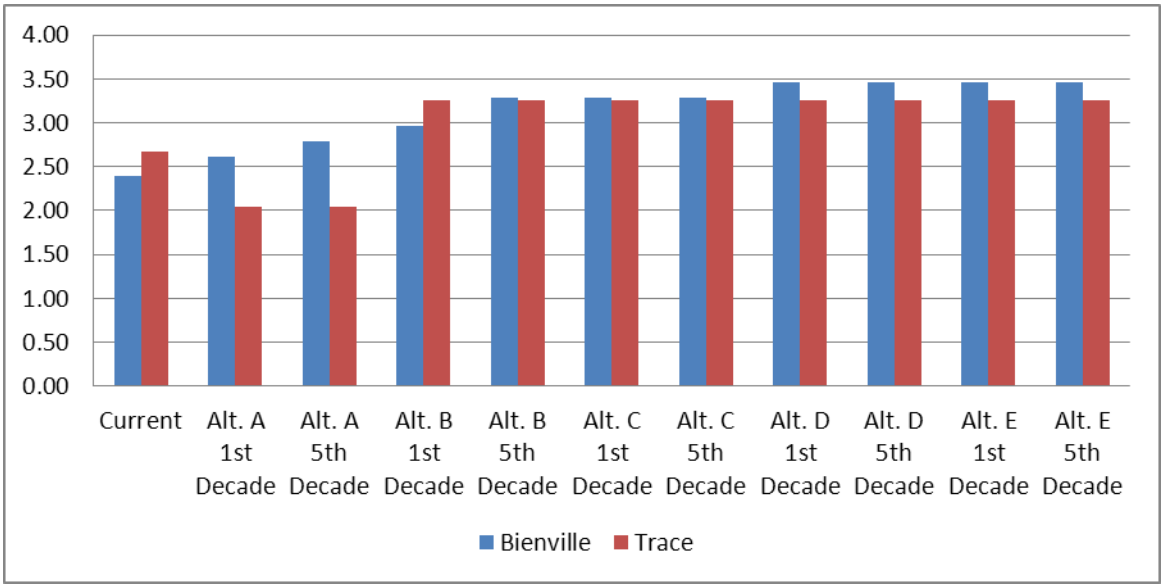


Figure H 42. Prairie associates current and estimated ecological sustainability evaluation scores by unit and alternative

Table H 18. Prairie associates ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Bienville	Fair	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.39	2.62	2.79	2.96	3.29	3.29	3.29	3.46	3.46	3.46	3.46
Trace	Good	Fair	Fair	Good	Good	Good	Good	Good	Good	Good	Good
	2.67	2.05	2.05	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25

H.2.7 Seeps, Springs, and Seepage Swamps Associates

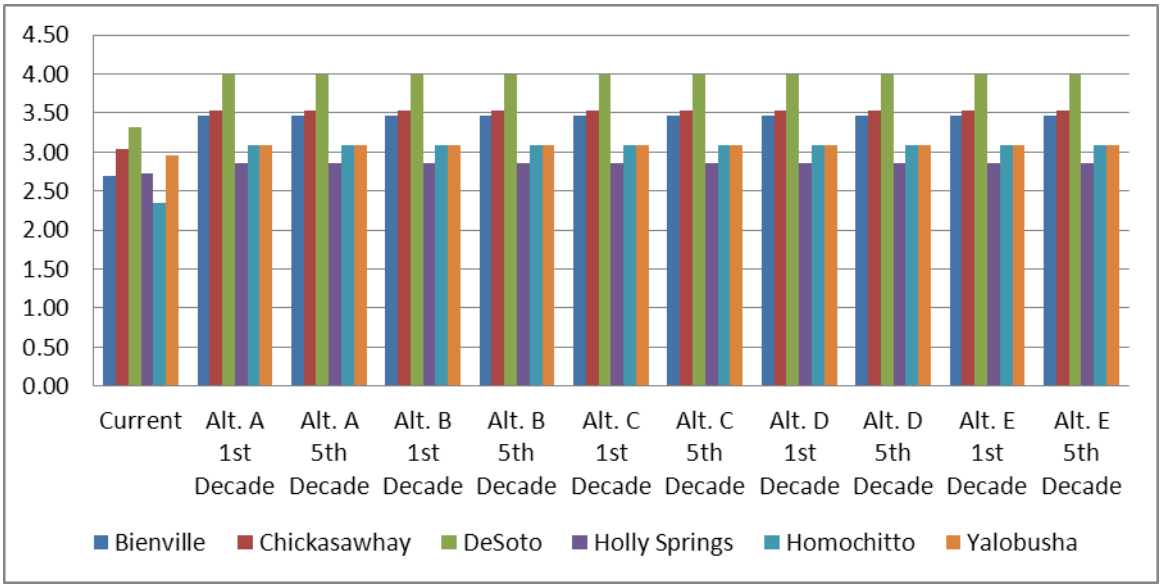


Figure H 43. Seeps, springs and seepage swamps associates current and estimated ecological sustainability evaluation scores by unit and alternative

Table H 19. Seeps, springs and seepage swamps associates ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Bienville	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.70	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46
Chickasawhay	Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good
	3.04	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54
De Soto	Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good
	3.32	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Holly Springs	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.73	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85
Homochitto	Fair	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.35	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08
Yalobusha	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.95	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08

H.2.8 Bat Roost Structure Group

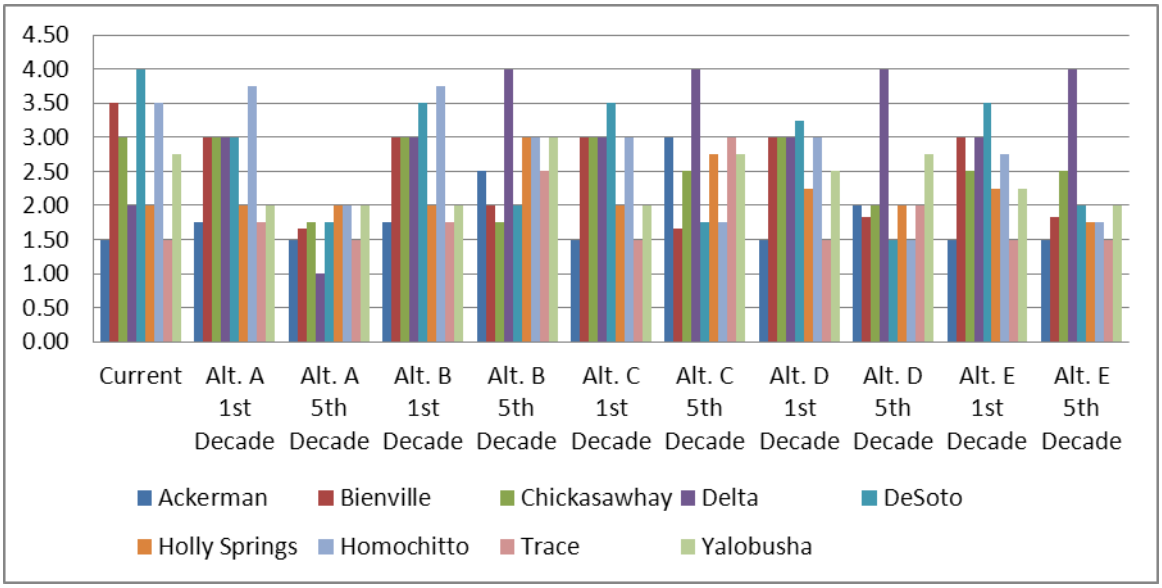


Figure H 44. Bat roost structure group current and estimated ecological sustainability evaluation scores by unit and alternative

Table H 20. Bat roost structure group ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Ackerman	Poor	Fair	Poor	Fair	Fair	Poor	Good	Poor	Fair	Poor	Poor
	1.50	1.75	1.50	1.75	2.50	1.50	3.00	1.50	2.00	1.50	1.50
Bienville	Good	Good	Fair	Good	Fair	Good	Fair	Good	Fair	Good	Fair
	3.50	3.00	1.67	3.00	2.00	3.00	1.67	3.00	1.83	3.00	1.83
Chickasawhay	Good	Good	Fair	Good	Fair	Good	Fair	Good	Fair	Fair	Fair
	3.00	3.00	1.75	3.00	1.75	3.00	2.50	3.00	2.00	2.50	2.50
Delta	Fair	Good	Poor	Good	Very Good	Good	Very Good	Good	Very Good	Good	Very Good
	2.00	3.00	1.00	3.00	4.00	3.00	4.00	3.00	4.00	3.00	4.00
De Soto	Very Good	Good	Fair	Good	Fair	Good	Fair	Good	Poor	Good	Fair
	4.00	3.00	1.75	3.50	2.00	3.50	1.75	3.25	1.50	3.50	2.00
Holly Springs	Fair	Fair	Fair	Fair	Good	Fair	Good	Fair	Fair	Fair	Fair
	2.00	2.00	2.00	2.00	3.00	2.00	2.75	2.25	2.00	2.25	1.75
Homochitto	Good	Very Good	Fair	Very Good	Good	Good	Fair	Good	Poor	Good	Fair
	3.50	3.75	2.00	3.75	3.00	3.00	1.75	3.00	1.50	2.75	1.75
Trace	Poor	Fair	Poor	Fair	Fair	Poor	Good	Poor	Fair	Poor	Poor
	1.50	1.75	1.50	1.75	2.50	1.50	3.00	1.50	2.00	1.50	1.50
Yalobusha	Good	Fair	Fair	Fair	Good	Fair	Good	Fair	Good	Fair	Fair
	2.75	2.00	2.00	2.00	3.00	2.00	2.75	2.50	2.75	2.25	2.00

H.2.9 Den Tree Associates

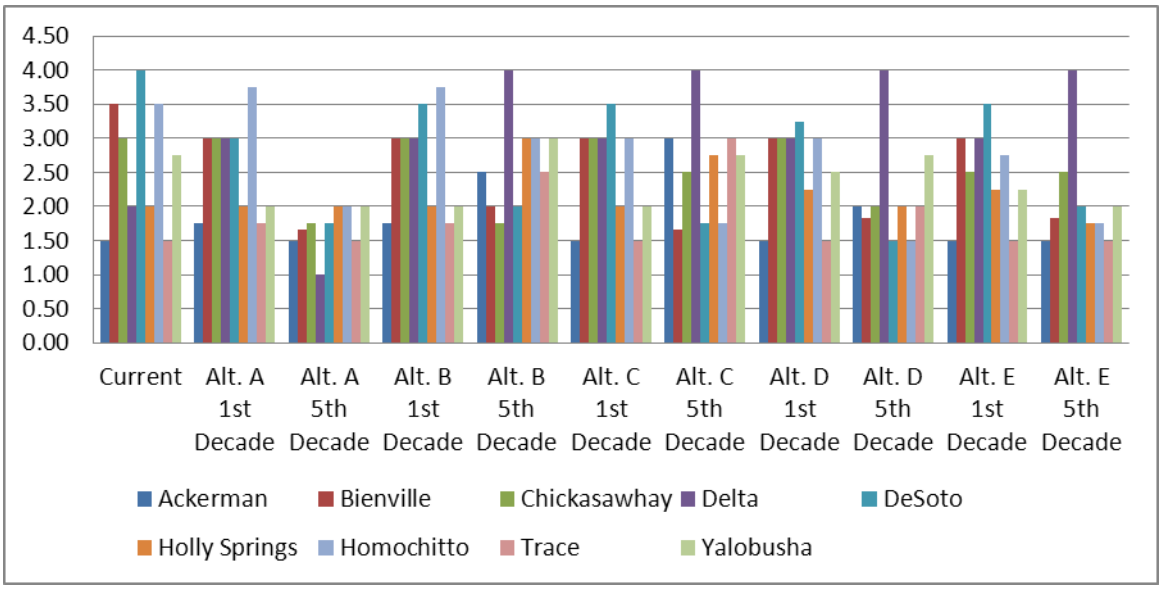
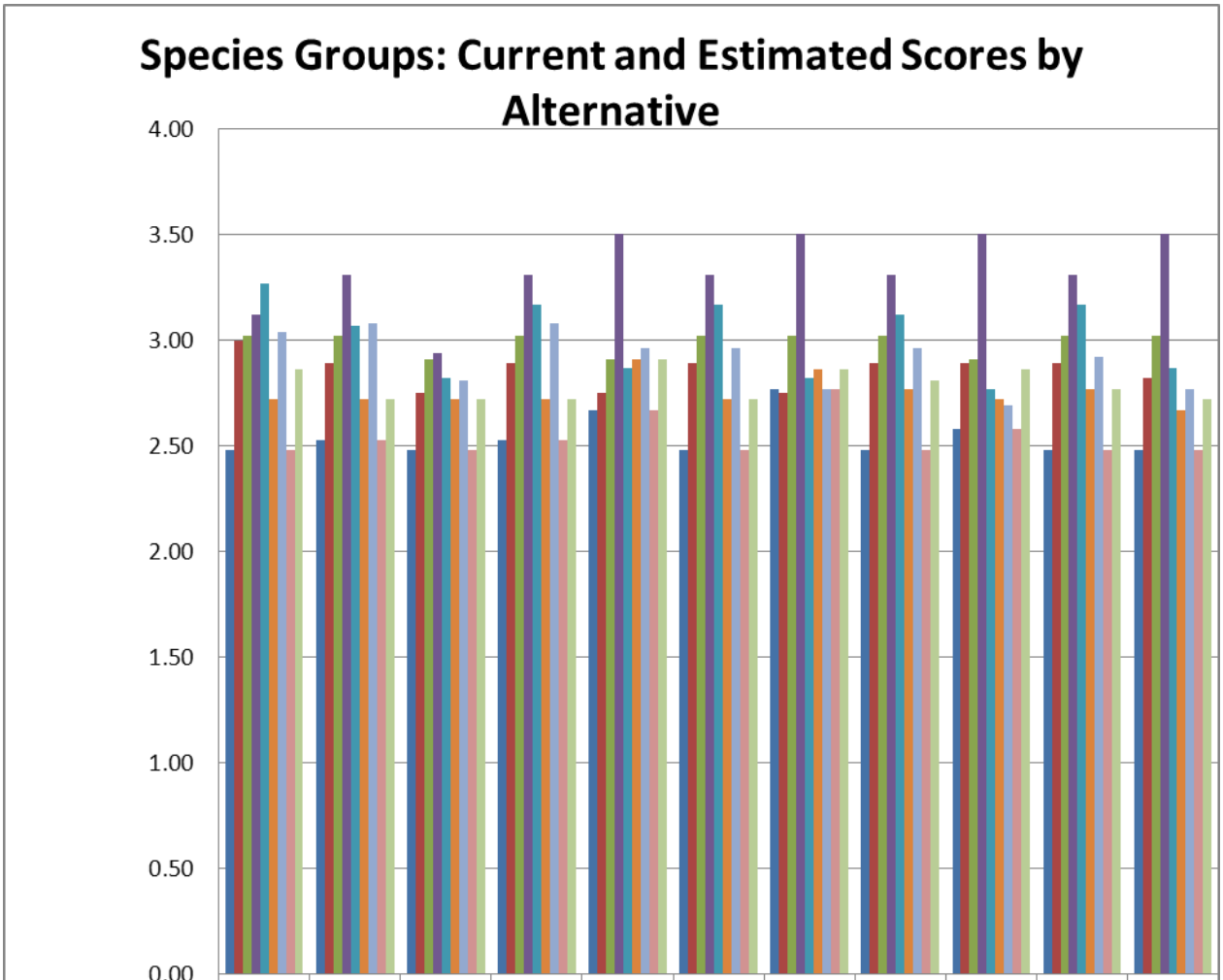


Figure H 45. Den tree associates current and estimated ecological sustainability evaluation scores by unit and alternative

Table H 21. Den tree associates ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Ackerman	Poor	Fair	Poor	Fair	Fair	Poor	Good	Poor	Fair	Poor	Poor
	1.50	1.75	1.50	1.75	2.50	1.50	3.00	1.50	2.00	1.50	1.50
Bienville	Good	Good	Fair	Good	Fair	Good	Fair	Good	Fair	Good	Fair
	3.50	3.00	1.67	3.00	2.00	3.00	1.67	3.00	1.83	3.00	1.83
Chickasawhay	Good	Good	Fair	Good	Fair	Good	Fair	Good	Fair	Fair	Fair
	3.00	3.00	1.75	3.00	1.75	3.00	2.50	3.00	2.00	2.50	2.50
Delta	Fair	Good	Poor	Good	Very Good	Good	Very Good	Good	Very Good	Good	Very Good
	2.00	3.00	1.00	3.00	4.00	3.00	4.00	3.00	4.00	3.00	4.00
De Soto	Very Good	Good	Fair	Good	Fair	Good	Fair	Good	Poor	Good	Fair
	4.00	3.00	1.75	3.50	2.00	3.50	1.75	3.25	1.50	3.50	2.00
Holly Springs	Fair	Fair	Fair	Fair	Good	Fair	Good	Fair	Fair	Fair	Fair
	2.00	2.00	2.00	2.00	3.00	2.00	2.75	2.25	2.00	2.25	1.75
Homochitto	Good	Very Good	Fair	Very Good	Good	Good	Fair	Good	Poor	Good	Fair
	3.50	3.75	2.00	3.75	3.00	3.00	1.75	3.00	1.50	2.75	1.75
Trace	Poor	Fair	Poor	Fair	Fair	Poor	Good	Poor	Fair	Poor	Poor
	1.50	1.75	1.50	1.75	2.50	1.50	3.00	1.50	2.00	1.50	1.50
Yalobusha	Good	Fair	Fair	Fair	Good	Fair	Good	Fair	Good	Fair	Fair
	2.75	2.00	2.00	2.00	3.00	2.00	2.75	2.50	2.75	2.25	2.00

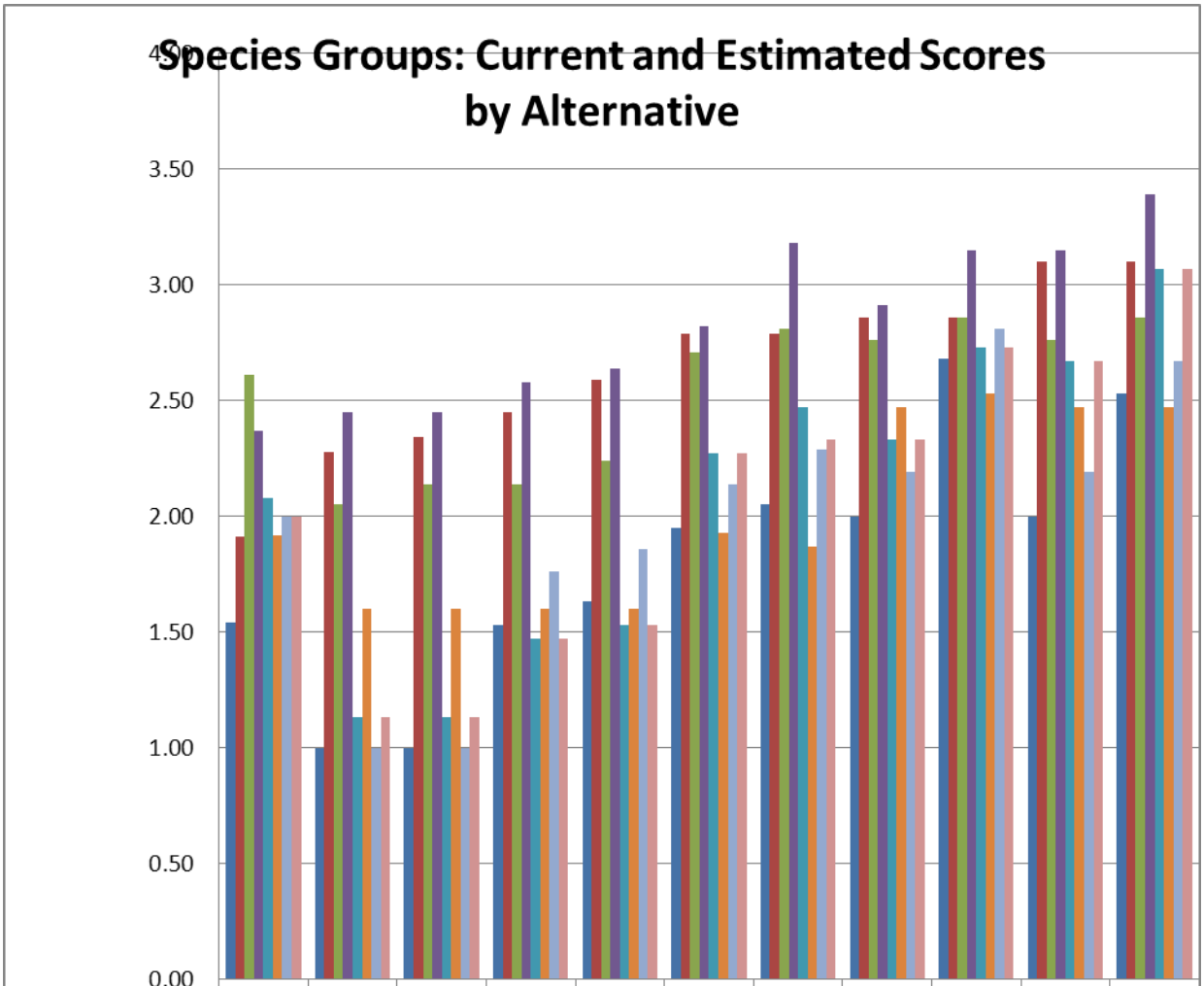
H.2.10 Forest Interior Birds Group



	Current	Alt. A 1st Decade	Alt. A 5th Decade	Alt. B 1st Decade	Alt. B 5th Decade	Alt. C 1st Decade	Alt. C 5th Decade	Alt. D 1st Decade	Alt. D 5th Decade	Alt. E 1st Decade	Alt. E 5th Decade
Ackerman	2.48	2.53	2.48	2.53	2.67	2.48	2.77	2.48	2.58	2.48	2.48
Bienville	3.00	2.89	2.75	2.89	2.75	2.89	2.75	2.89	2.89	2.89	2.82
Chickasawhay	3.02	3.02	2.91	3.02	2.91	3.02	3.02	3.02	2.91	3.02	3.02
Delta	3.12	3.31	2.94	3.31	3.50	3.31	3.50	3.31	3.50	3.31	3.50
DeSoto	3.27	3.07	2.82	3.17	2.87	3.17	2.82	3.12	2.77	3.17	2.87
Holly Springs	2.72	2.72	2.72	2.72	2.91	2.72	2.86	2.77	2.72	2.77	2.67
Homochitto	3.04	3.08	2.81	3.08	2.96	2.96	2.77	2.96	2.69	2.92	2.77
Trace	2.48	2.53	2.48	2.53	2.67	2.48	2.77	2.48	2.58	2.48	2.48
Yalobusha	2.86	2.72	2.72	2.72	2.91	2.72	2.86	2.81	2.86	2.77	2.72

Figure H 46. Forest interior birds group current and estimated ecological sustainability evaluation scores by alternative and unit

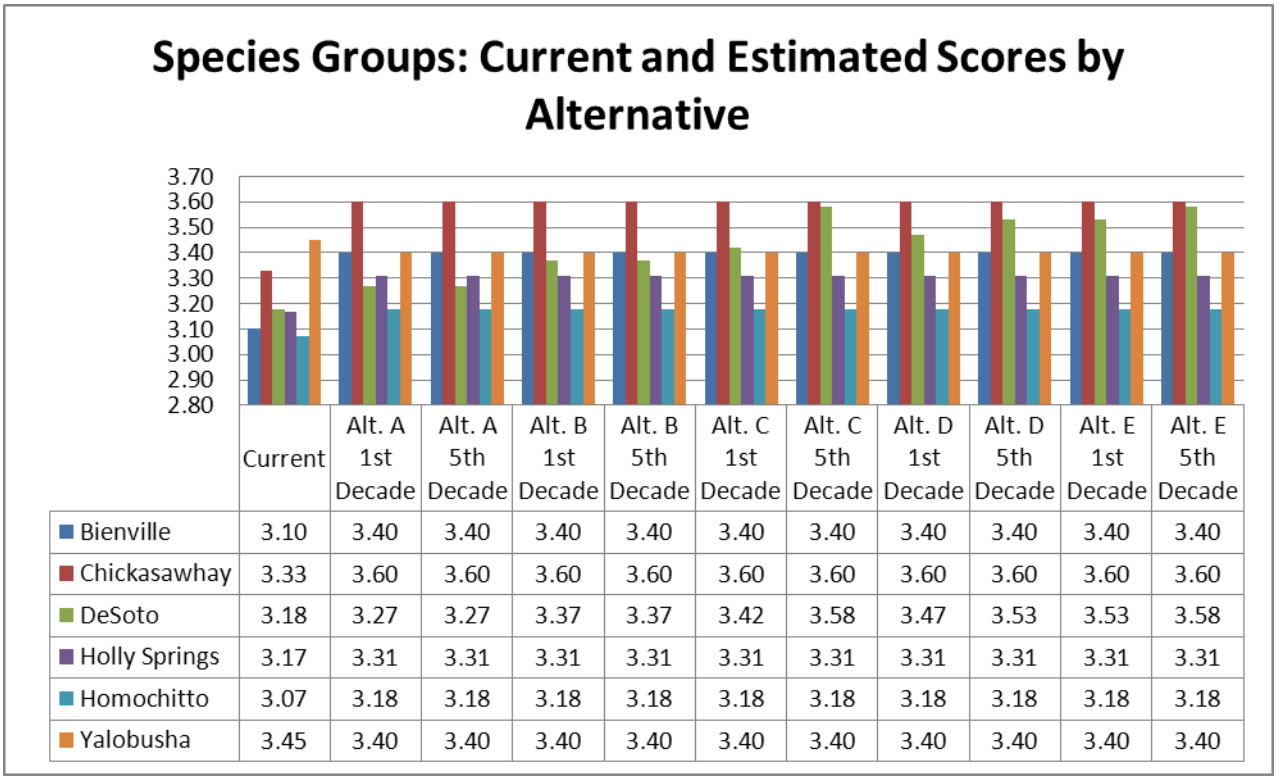
H.2.11 Species Dependent on Fire to Maintain Habitat



	Current	Alt. A 1st Decade	Alt. A 5th Decade	Alt. B 1st Decade	Alt. B 5th Decade	Alt. C 1st Decade	Alt. C 5th Decade	Alt. D 1st Decade	Alt. D 5th Decade	Alt. E 1st Decade	Alt. E 5th Decade
Ackerman	1.54	1.00	1.00	1.53	1.63	1.95	2.05	2.00	2.68	2.00	2.53
Bienville	1.91	2.28	2.34	2.45	2.59	2.79	2.79	2.86	2.86	3.10	3.10
Chickasawhay	2.61	2.05	2.14	2.14	2.24	2.71	2.81	2.76	2.86	2.76	2.86
DeSoto	2.37	2.45	2.45	2.58	2.64	2.82	3.18	2.91	3.15	3.15	3.39
Holly Springs	2.08	1.13	1.13	1.47	1.53	2.27	2.47	2.33	2.73	2.67	3.07
Homochitto	1.92	1.60	1.60	1.60	1.60	1.93	1.87	2.47	2.53	2.47	2.47
Trace	2.00	1.00	1.00	1.76	1.86	2.14	2.29	2.19	2.81	2.19	2.67
Yalobusha	2.00	1.13	1.13	1.47	1.53	2.27	2.33	2.33	2.73	2.67	3.07

Figure H 47. Species dependent on fire to maintain habitat current and estimated ecological sustainability evaluation scores by alternative and unit

H.2.12 Species Sensitive to Hydrologic Modification of Wetlands



	Current	Alt. A 1st Decade	Alt. A 5th Decade	Alt. B 1st Decade	Alt. B 5th Decade	Alt. C 1st Decade	Alt. C 5th Decade	Alt. D 1st Decade	Alt. D 5th Decade	Alt. E 1st Decade	Alt. E 5th Decade
Bienville	3.10	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40
Chickasawhay	3.33	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60
DeSoto	3.18	3.27	3.27	3.37	3.37	3.42	3.58	3.47	3.53	3.53	3.58
Holly Springs	3.17	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31	3.31
Homochitto	3.07	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18
Yalobusha	3.45	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40

Figure H 48. Species sensitive to hydrologic modification of wetlands current and estimated ecological sustainability evaluation scores by alternative and unit

H.2.13 Calciphiles Associates

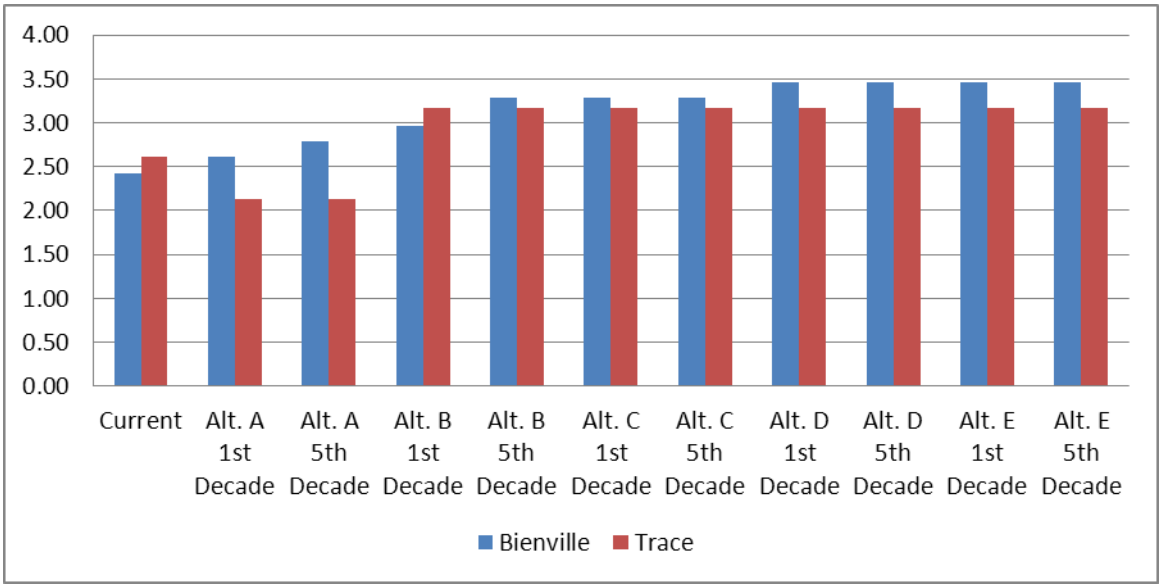
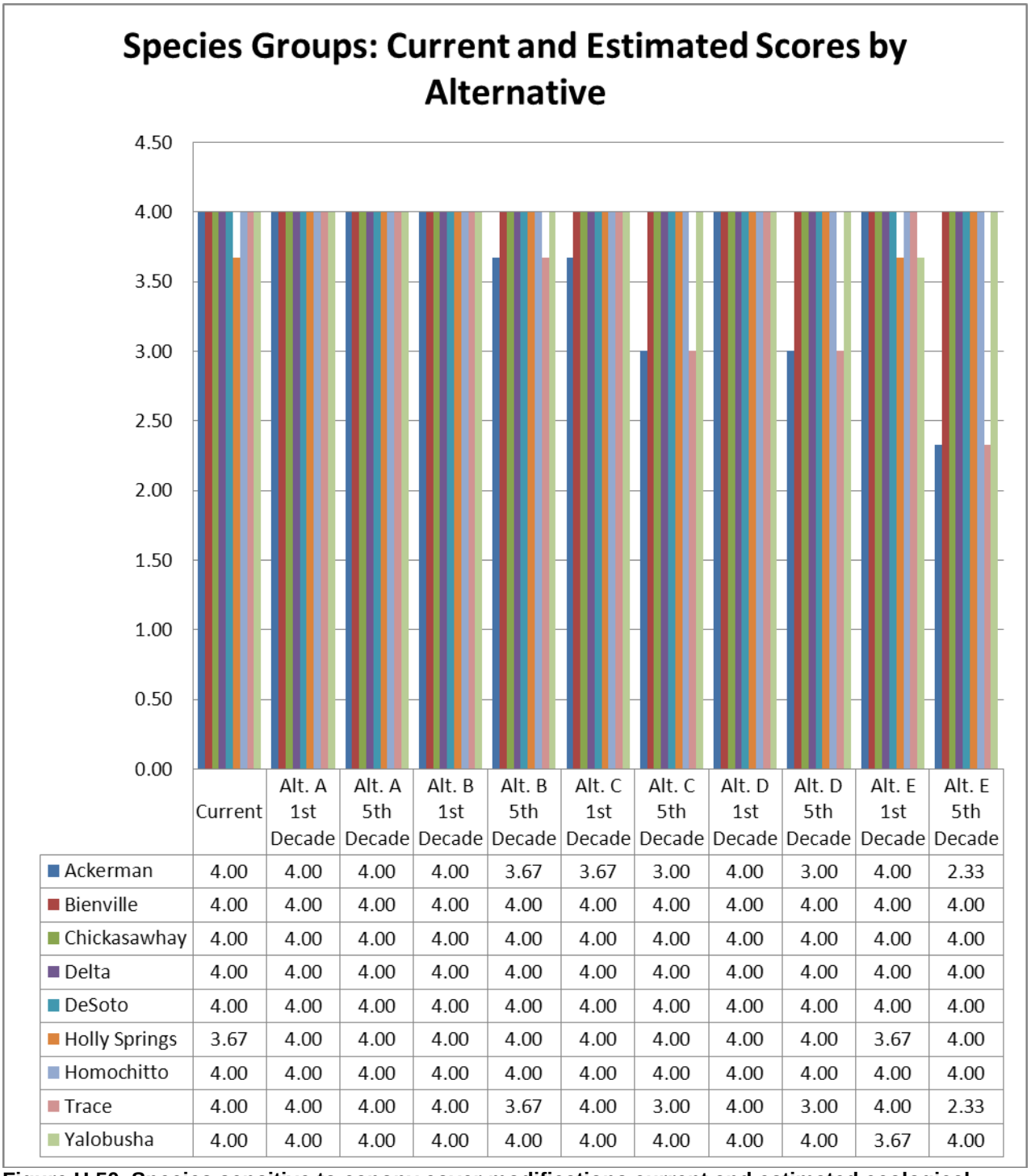


Figure H 49. Calciphiles associates current and estimated ecological sustainability evaluation scores by unit and alternative

Table H 22. Calciphiles associates ecological sustainability evaluation scores and rankings by unit and alternative

Unit		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	Current	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade	1st Decade	5th Decade
Bienville	Fair	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
	2.43	2.62	2.79	2.96	3.29	3.29	3.29	3.46	3.46	3.46	3.46
Trace	Good	Fair	Fair	Good	Good	Good	Good	Good	Good	Good	Good
	2.61	2.13	2.13	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17

H.2.14 Species Sensitive to Canopy Cover



	Current	Alt. A 1st Decade	Alt. A 5th Decade	Alt. B 1st Decade	Alt. B 5th Decade	Alt. C 1st Decade	Alt. C 5th Decade	Alt. D 1st Decade	Alt. D 5th Decade	Alt. E 1st Decade	Alt. E 5th Decade
Ackerman	4.00	4.00	4.00	4.00	3.67	3.67	3.00	4.00	3.00	4.00	2.33
Bienville	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Chickasawhay	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Delta	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
DeSoto	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Holly Springs	3.67	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.67	4.00
Homochitto	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Trace	4.00	4.00	4.00	4.00	3.67	4.00	3.00	4.00	3.00	4.00	2.33
Yalobusha	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.67	4.00

Figure H 50. Species sensitive to canopy cover modifications current and estimated ecological sustainability evaluation scores by unit and alternative